This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE

STATE OF NEW YORK,

For the Year 1873.

ALBANY:
CHARLES VAN BENTHUYSEN & SONS.
1874.

Digitized by Google

THE VAN BENTHUYSEN PRINTING HOUSE,
Printers, Stereotypers and Binders,
Albany and Castleton, N. Y.

Digitized by Google

TABLE OF CONTENTS.

ARTICLE.		PAGE.
I.	Medical Society of the State of New York, sixty-seventh annual meeting	3
II.	The annual address of the President, Dr. C. R. Agnew, upon some of the Relations of the Medical Profession to Education	70
III.	Report on the United States Pharmacopœia, by E. R. Squibb, M.D., of New York	82
IV.	A sketch of the progress of otology, by D. B. St. John Roosa, M.D., of New York	103
V.	Disease of left ovary, resulting in fatal hæmorrhage, by E. H. Bridges, M.D., of Ogdensburgh	133
VI.	Report of five consecutive cases of Colles' fracture, treated after the plan of Prof. E. M. Moore, M.D., by B. L. Hovey, M.D., of Rochester	135
VII.	Three cases of abscess and pelvic peritonitis from perforation of the appendix vermiformis relieved by operation, by R. B. Bontecou, M.D., of Troy	137
VIII.	Case of occlusion of the femoral artery from fracture of the femur; mortification of the leg; amputation, by George Burr, M.D., of Binghamton	140
IX.	Idiopathic peritonitis—annual address delivered before the Medical Society of the County of Albany, Nov. 12, 1872, by Joseph Lewi, M.D., of Albany	143
X.	Hemiopic and sector-like defects in the field of vision, and their connection with diseases of the heart and brain, by H. Knapp, M.D., of New York	149
XI.	A case of remarkable nervous perturbation, by C. A. Robertson, M.D., of Albany	164
XII.	Perineal lithotrity, by J. W. S. Gouley, M.D., of New York	166
XIII.	Obituary notice of Dr. Platt Williams, by Thomas Hun, M.D., of Albany	175
XIV.	Obituary notice of Dr. Peter Van Olinda, by A. Van Derveer, M.D., of Albany	178
XV.	Biographical memoir of Dr. Barent P. Staats, by Hiram Corliss, M.D., of Greenwich	180
XVI.	Obituary notice of Dr. John Henry Reynolds, by R. L. Allen, M.D., of Saratoga Springs	182
XVII.	Obituary notice of Dr. Darius Clark, by B. F. Sherman, M.D., of Ogdensburgh	183

Digitized by Google

Digitized by Google

SIXTY-SEVENTH ANNUAL MEETING

OF THE

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

FIRST DAY'S PROCEEDINGS.

Morning Session.

The Medical Society of the State of New York met, pursuant to the requirements of the statute, on the 4th of February, 1873, in the city of Albany. The meeting, held in the public hall of Perry Building, was called to order at 11 o'clock, A. M., by the President, Dr. C. R. Agnew, of New York.

Prayer was offered by the Rev. Dr. Clark, after which the President, Dr. Agnew, read his inaugural address, as follows:

Gentlemen of the Society:

We have come together at this time, from all quarters of the State, to celebrate the sixty-seventh anniversary of the foundation of our Society.

It is my first duty to thank you for the honor you have done me in calling me to preside over your deliberations, and to ask for indulgence, while I shall try to perform the functions of this high office, so that there may be nothing done, by design or inadvertence, to injure the best interests of that calling which we here represent.

Even a casual observer must be impressed with the increased interest that is everywhere shown, in the daily press, in journals and reviews, in public discussions, both popular and legislative, in many topics which, until comparatively recent times, have been thought to be the exclusive property of the medical profession. Abroad, but especially in England, sanitary medicine has grown almost to the proportions of a distinct science, and men of education and high purposes in the medical profession, and out of it, are industriously studying the sickness and death rates of communities, and search-

Digitized by Google

ing for and applying the results of inquiry to discover or lessen preventable disease. The growth of sanitary legislation has been so rapid in Great Britain that the only barrier, in the way of most sweeping and beneficent reforms, is the difficulty of finding a sufficient number of medical men, with the requisite preliminary education, to act as inspectors, and other sanitary agents. As an illustration of this fact, I am informed that a thousand medical men are needed, in Great Britain, to carry out the provisions of the Factory Act alone. Until very recently we, in this country, have not been aroused to consider the subject of sanitary medicine. And no one can read the paper, recently put forth by the Public Health Association of New York, from the pen of D. B. EATON, Esq., on Sanitary Legislation in England and New York, without feeling that we, as members of the medical profession, and as a Society, expose ourselves to the charge of conspicuous dereliction of duty if we do not take up the subject of State medicine with intelligent vigor.

We would therefore recommend the passage of a resolution by this body calling upon the county medical societies, most respectfully, but most earnestly, to consider the bearings of this subject upon the communities in the midst of which their members are engaged. Every county society should have an able committee constantly at work gathering knowledge of the health questions affecting the neighboring population, so that out of the combined labor of these societies, and their inevitable effect upon the popular mind, would grow an intelligent influence that would soon bring every rural district, hamlet, town and city under the life-saving operation of adequate legislation.

If we, as a profession, were thoroughly aroused in this matter, and were wisely using the already gathered knowledge to guide public opinion, and secure proper legislation, we would soon do much to correct the marvellous anomaly of health boards and sanitary inspectorships, managed in the interest of partisan greed, and thus earn a new and enduring title to the respect and gratitude of the public. No one, at all familiar with the preventable causes of disease, can pass through even our most favored rural districts, to say nothing of the crowded quarters of our towns, without feeling that we, as a profession, are loudly called upon, by every consideration of economy and philanthropy, to be actively at work in this most inviting and congenial field of public duty.

It is a most cheering indication of progress, to know that a bill has recently been introduced into the Senate of the United States,

Digitized by Google

to establish a Bureau of Sanitary Science. We would recommend that this Society take becoming action and express its approval of so desirable a measure, and by this expression of approval, if by no other means, give willing aid to the grand object which it has in view. The interest always felt by our profession in this State on the subject of medical education, has been much nourished by the action of the Harvard Medical School in reorganizing its *curriculum*. Without taxing your patience at this time by any prolonged statement of the case, I would merely content myself by urging upon the Society some action which would look towards influencing the Medical Schools within the limits of the State, to adopt such of the peculiarities of the Harvard and University of Virginia systems as may be deemed wise.

We must not forget, while taking action in this most important matter, the organic character of our schools.

In one sense we have no right to *interfere* in their internal management. They are almost entirely destitute of money endowment, and in most instances, the property involved in them has been slowly made by the gentlemen occupying the Faculty chairs, thus, without necessarily weakening their claim to public professional sympathy, placing them beyond the reach of our promiscuous interference. They have taken the risk of maintaining the organization of the Schools and holding up the dignity of our calling in admitting new aspirants to its ranks. We cannot forget, if we would, that any ability that we possess, to advance the best interests of our profession, is largely due to the technical training that we have had within their walls. We shall certainly find these Schools ready to listen to any well-matured suggestions that we may determine to make, looking towards the real improvement of their *curricula*. None of us, we may safely say, desire to see medical education cheapened or to see the doors to the profession so thrown open as to admit the immature and thoughtless, but all desire to see every wise provision made to invite into the profession those who have had their minds opened and invigorated by adequate literary and scientific training. If our Schools could be even partially endowed, so as to make it possible for their Faculties to lengthen the scholastic sessions and add capacious and well-manned anatomical and physiological laboratories in which all the students might be compelled to undergo daily drill: If there could be *post-graduate courses*, in which those who had shown an aptitude for scientific work might be retained, some in the double capacity of workers and teachers, and

Digitized by Google

some in the less conspicuous but certainly not less valuable occupations of searchers after truth in the many subjects of our science and art: If the methods of teaching could be so modified as to divide the students into classes and fix the studies to be allowed for each successive grade: If the plan of recitations could be so perfected as to diminish the time given by the younger students to lectures and increase the time given to recitations: If meritorious young medical men could be brought in larger numbers to do in the medical *curricula* many of the duties performed by the similar officers in academic colleges: If the system of quiz-classes could be more methodized and incorporated with the regular machinery of the colleges,—we might reasonably expect greater thoroughness in the work done for and by the students during college life; a higher result in real education, and a corresponding elevation in the profession itself. We commend this subject to the thoughtful attention of the Society.

Dissatisfaction is expressed by some thoughtful men among us with the basis of representation in our State and National medical associations. There are those who regard the county societies as the only proper unit of organization of the profession. They hold that the county societies alone should send delegates to this body, and that the various State societies should alone send delegates to the National Medical Association.

This subject has been so long agitated, and the affirmative urged by so many of our most deliberate and public spirited members, that some action seems to be called for.

We cannot be insensible of the fact that opinion is forming in the profession in this State which points towards an attempted revision of some of the provisions of our Code of Ethics.

While we should be very careful not to imbibe the spirit of restlessness and unwise hurry in the midst of which we live, and while we should not be turned aside from the calm, peaceful pursuits of our science and art to waste our energies in listening to the prattle of those who agitate because they have no solid foundation in their own characters on which to rest, we will show a positive weakness of which we believe we are incapable, if we thrust aside or precipitate questions because they are strictly ethical or likely, by the discussion, to annoy and worry us.

Among the many classes of the sick in the midst of which we work, none seems to us to possess greater claims upon our thought and attention than those which include the various forms of insanity.

Digitized by Google

While the State is making what seems to a casual observer large provision for the care of the insane, such provision, in some respects, is not up to the demand.

The provision made for the care of the epileptic and paralytic in our State is neither adequate nor rational. With the single exception of the arrangements made in New York by the Commissioners of Charity and Correction, little or nothing has been attempted. The consequence is that the epileptics, who form a most troublesome, incurable and dangerous class of the sick, linger in county houses or add a most damaging class to the inmates of our hospitals for the insane. The turbulent peculiarities of their insanity make them a disturbing presence among the other classes of the insane. Their maladies make their classification with the other insane most unsatisfactory, and they thus retard or obstruct the curative plans to which the other classes are justly entitled. We would recommend that this Society recommend to the State such provision as would make it not only possible, but obligatory, to place the two classes alluded to by themselves, either by enlarging existing hospitals or making other special provision. And while our attention is drawn to this subject let us not fail to urge, in every legitimate way, that the policy of the State should be, while exercising a proper economy in the building or maintenance of those charities, a limited number of which properly fall to be managed by the State itself, not to listen to the cruel advice of those who would screw down the provision made for the honest, indigent sick to the lowest possible figure fixed by a mathematical calculation.

We deem it our duty to call your attention, respectfully, without comment, to the act passed May 16, 1872, by the Legislature of this State, entitled "An act relating to the examination of candidates for the degree of doctor of medicine," inviting such action as you may think wise.

We have endeavored, with much conscious insufficiency, to comply with that provision of the by-laws which makes it the duty of your Chairman, at this stage of the proceedings, to make some allusion to the condition of the profession and to offer such suggestions for its improvement as he shall deem expedient, and, having so done, announce that the meeting is open for current business.

Dr. S. O. Vanderpoel moved that such portions of the inaugural address, as suggested action on the part of the Society, be referred to a committee of three to report. Carried.

Digitized by Google

The PRESIDENT announced the following committees:

On Credentials—Drs. W. H. CRAIG, of Albany; A. L. SAUNDERS, of Brookfield, and C. E. RIDER, of Rochester.

Business Committee—Drs. ELLSWORTH ELIOT, of New York; J. V. KENDALL, of Baldwinsville, and G. H. HUBBARD, of Lansingburgh.

Committee on Arrangements and Receptions—Drs. J. V. P. QUACKENBUSH and W. H. BAILEY, of Albany; DARWIN COLVIN, of Clyde, Wayne county.

Committee on Medical Ethics—Drs. THOMAS HUN, of Albany; E. R. SQUIBB, of Brooklyn; D. B. ST. JOHN ROOSA, of New York.

On motion of Dr. FRAZIER, a committee of three was appointed by the President, to invite the Governor, and such members of the Legislature as belong to the medical profession, to attend the sessions of the Society.

The following were appointed such committee: Drs. ROBERT FRAZIER, LEWIS POST and THOMPSON BURTON.

The Chairman of the Committee of Reception introduced Dr. G. W. BART, of Titusville, Pa., to the President, after which the PRESIDENT introduced him to the Society.

Dr. ELIOT, Chairman of the Business Committee, announced a paper by Dr. George Burr, entitled "A Case of Occlusion of the Femoral Artery, from fracture of the Femur, followed by Mortification and Amputation." Dr. Burr being absent, the paper was read by Dr. WM. C. WEY.

The Chairman of the Business Committee announced a paper by Dr. E. H. Bridges, entitled "Disease of the Left Ovary resulting in Fatal Hemorrhage." The paper was read by its author.

The following papers were announced by the Business Committee and read by title:

"Obituary Notice of Dr. Darius Clark," by Dr. B. F. SHERMAN.

"Hernia," by Dr. J. H. POOLEY, of Yonkers.

"The Effects of Railroad Travel on the Health of Women," by Dr. ELY VAN DER WARKER.

"Idiopathic Peritonitis," by Dr. JOSEPH LEWI.

Dr. D. B. ST. JOHN ROOSA, of New York, read a paper entitled "History of the Progress of Otology." After which the following discussion took place:

Dr. H. KNAPP—I have listened with the greatest interest to the paper that has just been read. It is mainly devoted to practical

Digitized by Google

purposes, which I think is eminently proper, considering the character of the Society.

There is, however, one chapter that has been worked out of late years, which I think is one of the most sublime triumphs lately achieved in the province of medicine; and that is the anatomy and physiology of the cochlea. It was long ago known that the pitch of sound depended upon the number of vibrations; but it was left for modern investigations to show us what it was in the ear which preceived the number. Helmholtz, the great physiologist, said, some years ago, that Corti's organ, now called the *zona arcuata*, was divided into arches of different densities, and perhaps different lengths, so that they could vibrate at different rates of velocity; and so, he said, when a sound is struck on an instrument it will put in sympathetic vibration some of these arches.

An obstacle to this theory was the absence of Corti's organ in birds. Anatomists have found that the last filaments of the acoustic nerve pass underneath the arches of Corti and unite with certain cells, which are now called "hearing-cells," and are stretched between two tight membranes, one of which is made up of dense stripes of tissue, and called the *zona pectinata*. These stripes are connected by a cement-like material, less dense in structure, so that they can, to a certain extent, vibrate independently. To those hearing-cells and their *annexa*, the last filaments of the auditory nerve have been traced, and the mode by which they are acted upon by sound is supposed to be this: A sound being produced outside, easily puts into vibration one of these cells, or its bristle-like continuation, and in so doing puts into co-vibration the nerve filament connected with it. Thus far it has been traced anatomically; but the theory is more than hypothesis; it is based upon anatomical facts in connection with physiological experiments. In certain *amphibia* the "hearing-bristles" are outside the body, and these animals have been placed in a vessel filled with water, and observed with a microscope while a loud sound has been produced, and it has been seen that certain tones produced vibration of certain sets of hearing-bristles, and of no others; so that a modified theory of Helmholtz is now in harmony with our present knowledge.

As to some of the practical applications of this, it may readily be imagined that the hearing organ might show deficiencies of this delicate apparatus, and one of them may be illustrated by the working of a double-stringed piano. Sometimes the two sets of strings may not be in unison, one being tuned a little higher than the other.

Digitized by Google

So people may hear double—that is, the same sound will appear to one ear higher or lower in pitch than it does to the other, according to the relaxation or tension of the *zona pectinata* of the diseased side.

There are other and rarer cases, of which I have seen a few, in which, besides hearing the original sound, the patient also hears two, three, or even four neighboring sounds, though the latter are less distinct. This may be explained by the cement between the bristle-like rods being thickened by exudation, or other morbid processes which lead to sclerosis, so that the bristles cease to vibrate independently. This condition may be called *diplacusis monauralis*, whereas the variety before mentioned is termed *diplacusis binauralis*.

With regard to the practical importance of diseases of the labyrinth, the doctor mentioned one point for the consideration of the Society, viz.: Some acute affections—cerebro-spinal meningitis for example—produce disease of the labyrinth, destroying the hearing power totally. Nothing is seen in the organ of hearing, however, on physical examination, and the patient remains deaf after his recovery from the disease. At the beginning of the disease there may be some slight catarrh of the pharynx and middle ear, which disappears, leaving an incurable deafness. When such cases come before us after the recovery from the general disease, and no sound is perceived by the patient, we may say with certainty that they are not amenable to treatment.

Dr. ROOSA said he would be sorry to consume the time unnecessarily, but wished to speak two or three minutes on a point raised by Dr. KNAPP in regard to the disease occurring in cerebro-spinal meningitis. He hoped that practitioners, who have the opportunity, would make *post-mortem* examinations with reference to the condition of the ear. We are painfully at fault in regard to our knowledge as to what *does* occur in the ear, in this disease, and he was inclined to expect with Voltolini that cases of inflammation of the labyrinth are sometimes mistaken for diseases of the meninges, when what would be proper treatment for the latter would prove destructive to any attempts at treating the ear trouble—as, for instance, the application of ice-water to the head.

He only wished to ask his brethren and fathers in the profession if they would look a little more closely into this matter, or give aural surgeons an opportunity to see the *post-mortem* condition of these parts.

Dr. WM. B. ALLEY read a paper on the "Ultimate Results of

Digitized by Google

Nerve Injuries in Gunshot Wounds," after which the following discussion occurred:

Dr. Wm. M. Chamberlain—Mr. President: The condition of uni-lateral sweating, which is mentioned in the paper and to which the attention of the Society is called, is, I think, quite fully discussed by Sidney Ringer, of London. I cannot exactly recall the substance of his article, but I think he details quite a number of cases under a variety of circumstances, and recites methods that he employed in treatment. The remedy which he found most useful, I believe, was sulphate of atropia, and the results were very favorable, and indeed signal, even in cases which had resisted almost every other form of medication. I think his paper will be found in the *London Practitioner*, during the past six months sometime, and perhaps in the November number.

Dr. B. F. Sherman—In this connection I am reminded of the case of a member of my own family who, ten years ago, as the result of typhoid fever, had inflammation of a parotid gland, which terminated in suppuration, and apparently the destruction of the gland. In this case precisely the same condition existed as in the case mentioned by Dr. Alley. When the patient took food or masticated at all, the face was in a profuse perspiration at once, standing in large drops or trickling down.

Dr. Knapp—Was this excessive sweating on the numb side?

Dr. Sherman—It was. I recollect that fact. That side was never dry.

Dr. Knapp—I explain these cases of paralysis of the facial nerve thus, that the secretion of the sweat may be under the influence of the motor nerves, as is shown by Claude Bernard, with other secretions, as the saliva, etc.; and when the nerve is paralyzed the secretion stops. And as there is an antagonism between the sensitive and the motor nerves, this may, perhaps, be utilized in explaining such facts. These are very striking cases, the face being wet on one side, the other being perfectly dry. In Dr. Sherman's case it may be contraction of the scar.

Dr. Sherman—There was no contraction whatever, no cicatrix, except that the gland was entirely gone, to all appearance. But there was no scar upon the skin, there was apparently no paralysis.

Dr. Knapp—In paralysis, there is want of sweat, and in your case there was uni-lateral secretion. The contraction may have been internal and the secretion due to hyperæsthesia of the nerve.

Digitized by Google

The PRESIDENT then announced as the Committee on the President's Inaugural Address, Drs. S. O. VANDERPOEL, J. P. GRAY and ERNST KRACKOWIZER.

The Chairman of the Business Committee requested instruction of the Society as to whether the Committee should take cognizance of any paper presented by an invited guest.

Dr. ROOSA offered the following: *Resolved*, that the Committee be requested to consider papers that may be presented by invited members of the Society, and cause them to be read, if thought expedient.

Dr. FRAZIER moved as an amendment, that such papers take the course that they would, if emanating from a delegate or permanent member.

The resolution as amended was adopted.

The Chairman of the Business Committee reported no further business for the morning, but said that the large number of papers which had been handed in to be read, required that gentlemen who proposed to present papers should hand them to the Committee at once, with a statement of the probable time they would consume.

The Committee on Credentials presented a list of invited guests.

Dr. CRAIG, of Albany, moved that the two contesting delegations from Niagara county, and their papers be referred to the Committee on Medical Ethics. Carried.

The Society then took a recess until 3 P. M.

AFTERNOON SESSION.

The meeting was called to order at three o'clock P. M. The PRESIDENT in the chair.

Dr. J. W. S. GOULEY read a paper on Perineal Lithotrity. At the close of his paper, Dr. Gouley continued as follows:

It has been urged by a kind friend of mine, whom I requested to find any fault he could with this operation, that it takes too long, from twenty minutes to half an hour. I think, however, that this is no objection, and that most of the surgeons here will agree with me on that one point. It is certainly better to take an hour to remove a number of fragments from a bladder than to extract a big one and, by so doing, tear the bladder. I think that is clear.

The next point raised was, "How are you going to destroy very large and very hard stones—oxalate of lime?" I said, "Drill them." I propose to revive Civiale's trilabe, an instrument with three prongs, made much stronger, and half an inch, or thirteen-

Digitized by Google

sixteenths of an inch in diameter. I said let us have a drill, a diamond drill if necessary, and drill them, hollow them out and break them—break them, rather than tear the bladder and destroy the patient.

Dr. Ernst Krackowizer—There is always a strong corroborative argument for any mode of treatment, and particularly for methods of operating, into which a surgeon has stumbled by accident, if it can be shown that they coincide in other particulars with methods that have been devised and foreseen. I speak of such accidents without which an operation could not have been finished, or without which the favorable result of an operation could not have been attained. From my own experience, I can adduce two such cases that corroborate the value of Dolbeau's Perineal Lithotrity. One other case I can give, not in favor of the operation, but in which the operation terminated successfully, which it ought not to have done.

The first case was a very interesting one. A lieutenant of volunteers was shot through the pelvis, the ball entering near the sacrum, chipping off some fragments of this bone, passing into the rectum and into the bladder, and making its exit over the pubes. There was, of course, escape of fæcal matter as well as of urine, from both wounds. But, surprising to say, the patient recovered, and all the trouble he had from the wound was that he voided small fragments of bone from his bladder. After some time, I forget the particulars now, some of these fragments of bone became lodged in the membranous portion of the urethra. Being of a very ingenious turn of mind, he devised several methods to reduce them in size so that they could be expelled, but did not succeed, and, sent by a friend of mine, he came to me for advice. He had all the symptoms of a foreign body in the urethra, and it was thought possible that he might have stone besides that. An operation was advised to relieve him from the lodgement of fragments in the membranous portion of the urethra, and that was cut into and three fragments of bone removed; and I introduced my finger into the wound, and to my great surprise, I fairly "walked" into the bladder, I might say. So dilated already had the prostatic portion of the urethra become, and so easily dilatable, that I could bring my finger in without any attempt to force the passage. I detected at once a very large calculus, and I introduced the forceps and the calculus crumbled to pieces, and I extracted it piece-meal. Now, here I performed, *unintentionally*, first the median opera-

Digitized by Google

tion for stone in the bladder, and then Dolbeau's operation of Perineal Lithotrity. That operation encouraged me only in suitable cases to make the median operation in preference either to the hypogastric one, or the lateral or bilateral operation. That was a case of mulberry calculus which I could catch very easily, and it measured three-fourths of an inch in circumference. I found it would have been impossible to extract that by the median operation alone; and if the stone had not broken of itself, not being provided with lithoclastic instruments, I would have had the greatest difficulty in performing the operation.

Now, this shows that if I had been acquainted with Dolbeau's operation, and if I had had the plan of operation beforehand, I would not have done accidentally what the operation prescribes to be done.

Another case which illustrates how well it is to operate with a preconceived plan is this: In the New York Hospital a patient with stone came in and I did the median operation. After having opened the membranous portion and dilated the prostatic portion with great ease, I introduced the forceps and grasped the stone in the diameter of an inch and a quarter or a half. I tried to grasp the stone in a different diameter, and I succeeded in grasping it in the small diameter of half an inch. I found the ends of the stone impinged against the bladder and I could not extract. I also found that I always grasped it either in a very large diameter or a very small diameter. Grasping it again in its largest diameter, and trusting to the dilatibility of the prostate gland, by coaxing the bladder and moving in different directions, I finally extracted it, but not without making a rent on the left side of the prostate body, which did not, however, involve the neck of the bladder. That patient got well. It took a little longer than we ordinarily see with the median operation until the sphincter of the bladder regained its power. I think it took two days before the water ceased to dribble away—but there was no serious delay in his recovery. I believe in twelve or thirteen days the wound had nearly healed up, and he passed the ordinary stream of water, with the exception that there was a little dribbling of water at the perineum through the urethra.

These cases illustrate in a striking manner the operation of Dolbeau, which Dr. GOULEY has succeeded in spreading before us. To sum up, I think it is an operation which does all that the median operation can do, and at the same time does more than lateral lithotrity with large stones. And I think there will be very few

Digitized by Google

cases of stone for which this method will have to be abandoned, either for bilateral or hypogastric operations.

Dr. J. C. Hutchison (of Brooklyn) — If there be any operation of lithotrity which is justifiable — which I very much doubt at the present time of speaking — it is the one to which Dr. Gouley has referred. The advantages claimed for this operation are, in the first place, the small size of the opening through the skin tissues down to the membranous portion of the urethra; and, in the second place, the fact that the prostate gland is not lacerated or cut. In regard to the first, it seems a very small matter whether the incision be half an inch or an inch and a half, as to the ultimate result. It is true that there is a little more hemorrhage from the longer incision, but it is very little. As regards the second, — the fact that the stone may be removed through a dilated prostate gland, rather than through one that is lacerated or cut — I do not appreciate entirely the value of this procedure. I know there are certain advantages claimed for it, that the bladder regains its tone more rapidly; but this operation is certainly limited to a small number of cases. The cases in which *calculi* are larger than thirteen-sixteenths of an inch — which I suspect is a rather large stone at the present day, when surgeons have become so anxious to operate for stone — are not very frequent.

The disadvantage of the operation, and that which seems to me to overwhelm all the advantages claimed for it, is the length of time required, varying from twenty minutes to half an hour. Now, I am quite confident that a larger experience will teach my friend, and others who may practice this operation, that it is very much safer to nick the prostate gland, either with a double or single lithotome, and remove the stone at once, instead of spending half an hour in removing these fragments.

The President announced the Committee on Nominations, as follows:

First district, Dr. J. C. Hutchison; second district, Dr. J. Foster Jenkins; third district, Dr. H. B. Whiton; fourth district, Dr. Alexander Ayres; fifth district, Dr. Alonzo Churchill; sixth district, Dr. Wm. C. Wey (chairman); seventh district, Dr. Caleb Green; eighth district, Dr. H. W. Dean.

Dr. S. O. Vanderpoel, Chairman of the committee, appointed last year, to consider the question of changing the time for meeting, read the following report:

Digitized by Google

The Committee appointed to consider the advisability of changing the time of meeting, report, that in the consideration of this question it is natural to inquire why the present time of meeting was originally selected, and whether any objections exist to the proposed change.

The Society now numbers so many years that it has been difficult to obtain the desired information. Several members who were interrogated were unaware of any particular reason which either now, or formerly, rendered the present time of meeting particularly desirable. One or two expressed an individual preference, as it afforded a slight relaxation during the more busy period of professional cares. From reliable information, however, it may be stated, that the present time of meeting was originally selected in order that the Society might hold its meetings during the sessions of the State Legislature, and that physicians who were legislators might be present during the meetings of the Society.

If it be objected to the change under consideration, that the Society and the Legislature ought to hold their meetings at the same time, in order that any subjects which require legislation might be more easily considered and acted upon, we may reply, that such subjects could be more fully discussed and matured if the Society met at a date previous to the session of the Legislature. In short, it is believed there are no insuperable objections; or if so, they have not been presented to the notice of the committee. But, if there are *no objections* to a change in the time of meeting, there are considerations which *favor* such a change very decidedly.

The inclement season of the year in which the session is now held, makes traveling difficult, disagreeable, and in some parts of the State almost impossible. As an illustration of this fact it may be mentioned that at the last meeting of the Society (1872), when this subject was considered, one of the members stated that he had been "snowed in" during a previous attempt to be present at the annual session.

Besides, the hotels are crowded, and it is difficult to obtain accommodations; the better halls for public assemblage are occupied by the Legislature, and the State Medical Society is obliged to hold its sessions in rooms which are very unfavorable for the transaction of business.

One other consideration will be brought forward, in the language in which it was originally presented in 1870, in the inaugural

Digitized by Google

address of the President, Dr. Jas. P. White, of Buffalo, to this Society:

"Perhaps it is inexpedient to change the time of holding the annual meeting of the Society, but we should not shut our eyes to the fact that it now occurs during the delivery of the courses of lectures in all the Medical Colleges of the State; thus rendering it exceedingly difficult, if not impossible, for the professors in these institutions to be present. Aware that this time is fixed by a law of the State, and that in many respects it is most wise that it should remain unchanged, simply remarking that it excludes the teachers in the schools, from attendance, and deprives us of their valuable assistance in our deliberations, I leave the matter, without suggestion, in your hands. The fall season presents more advantages than any other, as a time for the annual meeting. There is, as a rule, a comparatively healthy period in the latter part of September, when practitioners would find it more convenient to be absent from their patients than in the busy season of winter. Then, travel is also agreeable and easy, the hotels in Albany are not over-crowded, and there would be a better choice of rooms for assemblage."

Of the Medical Colleges throughout the State, but one meets before October, and that is in Albany.

In fact this period seems peculiarly fitted to the different wants of practitioners in all parts of the State, and, without designating a special day for the annual meeting of the New York State Medical Society, until the subject has been further discussed, your committee would suggest that the day selected should be from the latter half of September.

All of which is respectfully submitted.

S. Oakley Vanderpoel,
Chairman.

On motion of Dr. Eliot, the report was accepted, and the discussion of it made a special order of business for the evening session, after the reading of a report by Dr. Squibb.

Dr. T. Addis Emmet read a paper on "Laceration of the Perineum, involving the sphincter, and an operation for securing union of the muscle."

The Chairman of the Business Committee announced that Dr. E. H. Parker would give the history of a case of "Dislocation of the Tarsus from the Astragalus," and exhibit the specimen.

Dr. E. H. Parker—Mr. President and gentlemen: Recognizing

Digitized by Google

the duty of contributing what little in me lies, I have brought a specimen, in part to interest you, and in part to obtain information myself. It is a dislocation of the tarsus, to which I can find no similar case.

Last July a young man, a sailor, was admitted to our little hospital in Poughkeepsie, having a few hours before caught and injured his foot. He was bracing his foot against a pile, at the time his vessel was approaching the dock, in order to fend it off. The knee was caught and, as the vessel had some headway on still, his foot was rolled off with the pile. He found himself injured, and, upon presenting himself at the hospital, there was a peculiar distortion of the foot which I had never seen before. Upon the inner side there was a rounded projection, evidently just beneath the skin, and the carrying off of the heel to the outer side. Careful examination detected no fracture at all. We recognized the projection upon the inner side of the foot as the head of the astragalus. Exactly what was the position of the parts otherwise we were at a loss to say. Persistent efforts were made, while the patient was under the influence of chloroform, to reduce the dislocation. The os calcis we could move to a certain extent, but we could make no impression upon the position of the head of the astragalus, and were obliged to abandon the attempt for the night. Some attempts were made the next day, but we were then so satisfied of the impossibility of reducing the dislocation that we made no further effort. Our hope then was that the man would obtain a sufficiently good foot to use, expecting that the head of the astragalus would lacerate through the skin, possibly, and require removal. It did so, but the bearings of the foot were so much upon the outer side, or rather, the bearings of the tibia were so much upon the inner side of the support of the foot, that he never could bear any weight upon it, and in December last the limb was amputated in order that he might be furnished with an artificial foot, and so be able to earn his living.

These are the bones (exhibiting them) left in the coarse way in which they were first dissected, in order that it might very clearly appear what the injury was. The astragalus is in its place so far as the tibia is concerned, only in the position of extreme extension. The scaphoid bone is carried up, or the head of the astragalus is carried below, whichever you prefer. The os calcis is carried out beyond the external surface of the astragalus, and it will be seen at once how impossible it was for him to make any use of the foot, the pressure being entirely inside of the bearings of the foot.

Digitized by Google

The man never suffered a great deal of pain from this, much to our surprise. After the amputation he made a very fair recovery, and will soon be able to wear an artificial limb.

I desire. for myself, to ascertain whether or not any member of the Society has ever seen a similar dislocation, and that without fracture; for, as I am situated, I have only a limited library at my command which I can consult. I will simply add, that I take this to be not a dislocation of the astragalus, but a dislocation of the rest of the tarsus from the astragalus. The scaphoid bone and the os calcis were both separated from it.

Dr. E. M. Moore, of Rochester, read a paper on "Intra-capsular Fracture, illustrated by two cases," of which he presented specimens.

The following discussion then took place:

Dr. Gurdon Buck—Mr. President: This subject is one of very great practical interest. The fracture of the cervix femoris is of frequent occurrence, and of most frequent occurrence at somewhat advanced age, though not confined to advanced life. I think I have clearly recognized it in two instances, one at the age of eleven or twelve, and the other some seventeen or eighteen. And I have now a patient, an army officer, under treatment in the Presbyterian Hospital in New York, about thirty-five years of age. I may say that it happens almost invariably from a fall upon the trochanter. I make this assertion as the result of my own observations, which have been quite extensive in hospital practice.

In regard to fractures generally, this important point should be borne in mind, as it will often aid in clearing up obscurities that we encounter in these cases, that a fracture may be produced by every degree of violence, varying from a degree that will suffice to fracture a bone and there be exhausted, without producing any displacement, to such an extreme degree as will, after fracturing the bone, cause the fractured ends to protrude through the soft parts. This applies, I think, to fractures of the cervix, as well as fractures of the shafts of long bones, so that you may have a fracture of a long bone absolutely without shortening, the shortening being produced by the fracturing force continuing to act after the fracture itself has been accomplished. Just as it is if you have a stick of nitrate of silver wrapped up in paper, it may be broken in two or three pieces and yet maintain its shape and length; after the fracture the parts may be held in position by the investing tissues, the periosteum, etc.

In regard to this particular fracture now under consideration. I

Digitized by Google

would like to enforce certain practical rules to which I attach a great deal of importance. A patient has met with an injury of the hip—he has fallen—or has made a bad step, and come down with the whole force of the fall and weight of the body, upon the trochanter. I may say that the strong presumption is, especially if the individual is one in advanced life, that it is a fracture of the cervix. Well, when you come to examine the patient, lying upon his back, with his limbs extended and parallel, you arrive at once at the conclusion, from inspection, that it is not a dislocation, but an injury to the hip.

The extended parallel position of the limb is conclusive evidence that no dislocation exists. In all the varieties of recent dislocation, the limb is never extended upon the trunk, but retracted more or less, and either adducted or abducted. Then, in regard to what has happened, you take a survey of the limb, and you can infer that there is no fracture in the course of the shaft, for if there is, as a general rule, there will be some indication of it. And you measure it, not by bringing the ankles together, but by a tape—a graduated tape, if you have one—from the anterior superior spinous process of the ilium to the inferior extremity of the inner malleolus.

I will digress a moment to illustrate the importance of that. A former pupil of mine, after having completed his service in the New York Hospital and visited Europe, on one occasion was accompanying Mr. Erichsen in his visit through the wards of the latter's hospital service, and had his attention called to a case of fracture of the thigh. The treatment had just been completed and the fixtures removed, and Mr. Erichsen remarked on the excellent result. When the limbs were together the ankles corresponded, and there appeared to be no shortening. After he passed on, my pupil took out a measure and found a difference of nearly an inch. Still it was a good result.

Well, in regard to this injury, if you have more or less of rotation outward of the limb, more or less eversion of the toes, it will vary in degree, but it will be sufficiently marked. And if you find that in rotating inward the rotation is arrested, or restricted when the foot arrives at a direct position, and accompanied with pain, while rotation outward is practicable, even beyond natural limits and without pain, and the degree of shortening varying most frequently from a half an inch to an inch and a quarter, and at the same time in comparing the outline of the two sides you notice that the lame side is not as bulging, is more or less flattened, has lost its convexity, or has it not to the same degree as the sound side,

Digitized by Google

you may infer a fracture of the cervix, and you don't need to torment your patient to elicit crepitus.

When, in these fractures, the bones are impacted, you have them in the most favorable condition for union. But by endeavoring to elicit crepitus, you may disengage the fractured surfaces and rupture the connections of the cervical ligament and so prevent union. The ascertaining of crepitus is not essential to establish a diagnosis. And I will go a step further. I can corroborate what I say, by two clearly marked instances. You may have these other symptoms, and absolutely no shortening from measurement on your first examination, and yet you may infer the existence of a fracture. A simple contusion does not disable the joint and impair its motion to the extent that a fracture does.

A servant in the family of one of my colleagues in New York, living then in my neighborhood, while arranging curtains upon a step-ladder, the step-ladder tilting, went down upon her hip. She was a stout person of from 35 to 40 years of age. I found these symptoms: extreme pain in rotating the limb, especially inward, while rotating further outward was unobstructed. A careful measurement ascertained no shortening. At the second visit, a day or two afterward, I found shortening.

The second instance occurred at the New York Hospital. A stout heavy man fell through a stairway in a building upon his hip. There was absolutely no shortening in that case. Rotation outward, extreme tenderness and restricted rotation inward, while free rotation outward was present, and no shortening. That man was seized with a violent attack of delirium tremens and required restraint; he was very unmanageable and died within a week. Before examining the body I carefully measured the limb and found that shortening had taken place to the extent of at least an inch; and we found a fracture, and have the specimen preserved in the hospital museum.

Where the cervix joins the trochanter, the upper extremity of the shaft, as it does at a slight angle, the weight of the body is transmitted through the cervix, and the resistance is upon the surface upon which the trochanter lies; and the separation takes place at the juncture, with more or less splitting of the trochanter, while the fragments or split portions are held together by the surrounding tissues. Where you have shortening of an inch or more you will then recognize, in tracing the femur up, if you do both sides at the same time, that your fingers bury in deeper, more abruptly, on reaching the summit of the trochanter, than on the sound side of

Digitized by Google

the body; and with that you will see a want of symmetry in the outline, a flattening, a less degree of curve.

Where the fracture takes place within the capsule, through the narrowest part of the cervix, you will have a greater degree of shortening, if not at first, subsequently when from failure of union the ends may become rounded. The shortening may exceed two inches, but can be considerably diminished by manual extension of the limb; but on discontinuing the extension, the original shortening recurs.

This I verified a little while ago in the case of a patient sent from the country, a case of one of my colleagues. I found the patient unable to bear weight upon the limb; going about with crutches, and with shortening of over two inches, which could be reduced to an inch or less.

I could recall another case now under treatment. He was thrown with violence from a wagon, from a horse running away, at one of the military posts in Kansas. He fell and came down with great force upon the right trochanter. He was examined by the professional gentleman there, a contract surgeon as he stated, and evidently he did not appreciate the existence of the fracture. They recorded it as an injury or contusion, and at the end of ten days he was not only encouraged, but it was insisted that he should be up and use his limb; and he was not allowed to use crutches, but to have a couple of canes. And when he came to the hospital, three months after, he was still compelled to use a cane. He could not bear weight upon his limb. And as he stood, the change in regard to the rotation was not obvious, but when he lay in bed, his limbs quiescent, then it was sufficiently marked, not extreme, but still marked and evident. In this case there was shortening of an inch and a quarter, not admitting of being lengthened by manual extension. The conclusion arrived at was that, in consequence of the unfortunate management of it, consolidation had been delayed, but might still be effected by subjecting the limb to proper treatment. Consequently the patient was put to bed and the limb put up in the fixtures requisite to keep up moderate extension by means of a weight and pulley. The extension, however, did not aim to lengthen the limb, but was intended to hold it steady. In this method of treatment it is important early, say about the tenth day after the injury, to have the patient assume a sitting posture once in twenty-four hours, so as to prevent rigidity of the hip joint.

Dr. A. T. DOUGLAS—Mr. President: I wish to make one remark

Digitized by Google

regarding the shortening by measurement. Some four years ago I had a case of fracture of the right femur, near the juncture of the upper and middle thirds, which I treated on an inclined plane. The patient was about thirteen years of age. After I made my measurements the best I could, I found about half an inch of shortening from the anterior superior spinous process of the ilium to the inner maleolus. I brought the ankles together and they corresponded; the heels corresponded, still by making the measurement I got that amount of shortening, and it annoyed me a great deal, because it was in a family where I knew that if there was any shortening, and it was perceptible, it would give me trouble, and I got very nervous over it. But one day, looking across the abdomen, I fancied that the superior spinous process on one side was a little higher than on the other. Taking my tape and measuring from the umbilicus to the right side and to the left, I found the superior spinous process just half an inch higher on the left than on the right side, which accounted for all the difference. When the boy got around it was all right. I therefore think it would be well to compare the superior spinous process of the injured side with that of the uninjured side.

Dr. A. N. BELL—I wish to mention a case which I conceive to be an exception to what has been said by Dr. BUCK. It was a fracture which occurred without there having been, so far as could be ascertained, any force on the trochanter. A gentleman, only twenty-six years of age, by accident stepped on an elevator in a store in New York, which went down with him about forty feet before it struck. He was seen in the elevator standing when it struck, and then he was seen to topple over. He was taken home, and on examination under chloroform it was found that he had the usual signs of an impacted fracture of the cervix. No crepitus could be discovered whatever. There was an immediate shortening of over an inch. He had no outside contusion; and from the observation of half a dozen people, he seemed to come down plump on his feet; but, of course, the force of the fall, standing on the platform of the elevator, quickly brought him all in a heap. He recovered with very great facility; in six weeks' time he was walking with a cane. It has been now nearly six years since this occurred. I saw him last more than a year ago. He was still wearing a thickened sole on his shoe of an inch and a quarter thick, the limb being about that much shorter than the other.

I only mention this, as I said, as an exception to the cases which

Digitized by Google

have been stated, it being a case in which the man probably fell on his feet.

The Chairman of the Committee on Arrangements and Receptions then introduced Dr. E. M. HUNT, delegate from the New Jersey State Medical Society, who said:

Dr. E. M. HUNT — Mr. President and gentlemen: I convey to you the salutations of the State Medical Society of New Jersey. And yet I am a little conscious of some embarrassment in the matter, because it is so much a conventional formality, rather than the expression of a real brotherhood. But I think that for two reasons I can assure you that, so far as our Society is concerned, it is something more than a mere formality.

As to a sentiment of gratitude, our relations to you are somewhat peculiar. We are a neighboring state; most of our practitioners have received their education under your charge; and sometimes, sir, we almost count ourselves as a part of the State of New York. But, although we cannot say we are of you, we can say that "We are not one, and yet not two; but look alike as sisters do." (Laughter.)

There is something more than a mere unity of sentiment, and a community of interest, that arises out of our mere relations in the profession. Why, sir, after we get a little away from you, you help us very much as to seeing with our eyes; and we find ourselves rubbed pretty sharply between your Flints; and we find that, whoever is second, your Hamilton must be first. And further than that, even after we get started, that to complete our preparations we must get more of Doctor Squibb; and we find that your Emmets are as eloquent in deeds as the Emmets of old were in words. Therefore, as a sentiment of gratitude, we have to think something of you.

Then, sir, there is another principle that comes in: we think something of ourselves, and of our profession; and in order to do this, we have to brag of New York; for the status of the profession throughout the world depends, as we know, more upon the State Medical Society of New York than upon any other body of men in this country. (Applause.) Therefore, whatever relates to your interest relates to our own, for we are known abroad by the status of the profession in the State of New York. You are not metropolitan but cosmopolitan, and the consequence is that we are bound up, and wound up by these interests in our relations to you. Sir,

Digitized by Google

we are proud of the fact that you thus bear the banner of the medical profession so grandly; for it is not only in New York that we hear from you, but also in Buffalo, Utica, and all over the State.

I must say a word in regard to the State Medical Society in New Jersey. It is a great thing to have to accept one's situation. We are so situated that we cannot start medical colleges. We are kind of sandwiched in between New York and Philadelphia; and we know that our position is that of an alimentary canal; and we are cultivating the spirit of absorption; we are the absorbents of the medical profession. (Laughter.) Not exactly suckers, but, more elegantly, lacteals. (Laughter.) The best thing these great producers can do is to have consumers, and this is the stimulus. We are getting the habit of consumers, and are a little greedy in that direction, and we, in this way, hope to stimulate the profession to work; because I have sometimes felt, as we all feel, when I have been in a family with eight or ten children around the table, and seen how they went into the food, a kind of satisfaction to see them do the thing so well; and if we can only eat up, and drink up, what you give us, it is about all that we expect to do.

I will say a single word more in regard to a matter that was brought so ably before you by your President, and that has interested me and our Society, in relation to the American Medical Association. We have felt very much that the mode of representation in that association is very loose. For instance, it so happened, as I remember, some three or four years ago, when I was in attendance, that there were between fifty and sixty from the District of Columbia, about fifty from the State of Maryland. Well, had these gentlemen shown brilliancy or activity in the profession at all corresponding with their numbers, it would have been a delightful thing. I remember that this case happened in our State last year. A gentleman, who was a member of the Pathological Society, was refused by the State and county societies, and yet he was admitted without difficulty into the American Medical Association. We have felt this so much that at our last meeting a committee was appointed to inquire—not to propose anything very definite—but to inquire into the basis of the representation, and also to talk with members of other societies, or correspond with any committees of any other societies, in reference to the same matter. And I was very glad that this matter was alluded to in your President's address. And I do hope that something will be done in this direction. You are the authors, really, of that association, and we don't want you to

Digitized by Google

forget your foster-child; we cannot quite afford to do without it. And yet, there certainly is need of a little change in respect to some of these matters; whether it be the one suggested by your President, or whether it be that, at least, all delegates from county societies should be accredited, or all delegates from states accredited by a State medical society. I merely take the liberty to suggest that some action of that kind would be very much in accord with the feelings of our own societies.

I have nothing more to say except to thank you for the courtesy which has been extended to me, and to our State Society through me. I have been very much interested to-day in the proceedings of your body, and I only regret that it is necessary for me to return to-night. And wishing you every success, not only in your present deliberations, but in your noble efforts in behalf of our noble science and art, I bid you farewell. (Applause.)

Dr. QUACKENBUSH, Chairman of the Committee on Arrangements and Receptions, expressed his pleasure at the address of Dr. HUNT, and added that, until he found him among the lacteals of New Jersey, he had supposed that the Doctor was weaned. (Laughter.) He then read an additional list of invited guests.

The Secretary read an invitation from the Medical Society of the county of Albany, requesting the pleasure of meeting the members, delegates and invited guests of the State Society, on Wednesday evening in Perry Hall, immediately after the President's address; which invitation was accepted.

The following papers were read by title:

"Case of Abdominal Lipomata," and "Senile Hypertrophy of the Prostate Gland," by Dr. JAMES S. BAILEY.

"Unusual case of inflammation of the Urinary Organs," by Dr. S. T. CLARK.

The Society then adjourned until 8 o'clock P. M.

EVENING SESSION.

The meeting was called to order at eight o'clock by the Vice-President, Dr. B. F. SHERMAN, who occupied the chair.

Dr. E. R. SQUIBB, of Brooklyn, Chairman of the Committee on the Pharmacopœia of the United States of America, read the report of the committee. (See Article III.)

The CHAIRMAN—What disposition will you make of this paper?

Dr. SQUIBB—I may state here, in explanation of the President's

Digitized by Google

question, that a committee, consisting of myself as chairman and Drs. Green and Smith, were delegates from this Society to the Convention for revising the Pharmacopœia which met in Washington in 1870. We attended that convention, all three members of the delegation, and we were the only State delegation present — showing what an interest the United States, as a general thing, take in the Pharmacopœia. The only State represented in the Convention for revising the Pharmacopœia was the State in which the Pharmacopœia originated. There was one man, a pharmaceutist from Maine, who represented the Maine Medical Society, which stands in the same relation to Maine as ours to the State of New York, but he was not a member.

I was appointed to serve on the Committee of Final Revision and Publication, but as I had served in 1860, and the labor was very great to me at that time, and for reasons given in this paper, I declined serving, and Dr. Wm. Manlius Smith was the member of this Society who was put upon the Committee of Final Revision and Publication. This committee, however, met in Philadelphia, and the Philadelphia members were made a quorum by the convention, so that the distant members were only members by courtesy; that is to say, their names appear, as published, as members of that committee, but they really had nothing to do with it. Dr. Wm. Manlius Smith, member of this Society, well known to us all, never was present at a single meeting, and never was applied to in regard to any of the questions involved.

After finishing the work of our delegation to this convention, we reported to this Society in 1871. It was then presumed that the committee, having finished its work, would be discharged, but it was not. I therefore follow the rule adopted by me in 1860, of reporting to this Society on the completion of the entire work. The Pharmacopœia having been revised and published, I make this report, which may be taken by the Society as the performance of my duty to it, or as a voluntary contribution. (Applause.)

On motion of Dr. J. V. Kendall, the report was accepted.

A paper entitled "Dropsy after Scarlatina," by Dr. George Douglas, was read by title, and referred to the Committee on Publication.

The Society proceeded to discuss the suggestions of the Committee on changing the time of the meeting of the Society. After a lengthy discussion, the matter was postponed until to-morrow morning.

The Society then adjourned until Wednesday morning at 9 o'clock.

Digitized by Google

SECOND DAY'S PROCEEDINGS.

MORNING SESSION.

The Society met pursuant to adjournment, at 9 o'clock, A. M., President AGNEW, in the Chair.

No clergyman being present, prayer was offered by the President.

The Secretary read the minutes of Tuesday's sessions, which were adopted.

The Secretary read the report of the Chairman (Dr. Oliver White, of New York) of the Committee on By-Laws.

NEW YORK STATE MEDICAL SOCIETY,
Session of 1873.

The Standing Committee on By-Laws ask leave to report, through the Chairman of the Committee, that during the past year, copies of the Constitutions and By-Laws of the County Medical Societies of St. Lawrence and Ulster have been submitted to the Committee for examination.

O. WHITE,
Chairman of Committee on By-Laws.

The report was received.

SECRETARY—I have received several letters from distinguished gentlemen of the profession, regretting their inability to be present with us. I will simply give the names of these gentlemen without reading their letters: Dr. C. E. Brown Sequard, of New York; Dr. Henry I. Bowditch, of Boston; Dr. Wm. Brodie, of Detroit; Dr. E. M. Snow, of Providence, Rhode Island; Dr. Bassett and Dr. Chamberlain.

Dr. F. N. OTIS (of New York) read a paper on "Stricture of the Male Urethra, with Results of Operation with the Dilating Urethrotome."

The PRESIDENT announced that the paper was open for discussion.

Dr. GOULEY—While I approve the method of Dr. Otis, I think the cases he has reported are of comparatively recent strictures—strictures in their formative stage; and I think that this method is quite applicable to strictures in their formative stage. They are more likely to be thoroughly divided by the small blade of the urethrotome, and more likely to remain permanently cured by this method. But I am not willing to accept this method of treatment without occasional dilatation, after the union of the cicatricial splice in the wall of the urethra. I think that while thin bands may be

Digitized by Google

sundered so as to be contracted on either side, and the gap filled by new tissues, still in old confirmed strictures, I should be unwilling to do without catheterism for some time. I think that point should be distinctly made and understood. I believe that is all I can add to what has already been said.

I wish, in this connection, to report a case of retention of urine caused by a traumatic stricture of the urethra, which was relieved at once by puncture of the bladder.

The PRESIDENT—Does it relate to the paper before the house?

Dr. GOULEY—It relates to strictures of extreme caliber, and that is the topic under discussion, I believe.

I have already, in regard to strictures of large caliber, given my general approval of the plan of treatment, and I wish to introduce this case in order to illustrate the plan of treatment adopted with strictures of extreme narrowness; and in regard to this, I shall take the liberty, if the Society will permit, to state a case.

A boy, nine years of age, fell astride a fence and ruptured his urethra. There was considerable bleeding following the injury, and there was retention of urine within three months, and occasional retentions, perhaps two or three or four times a year, until he came under my observation. He had been catheterized a short time before without any result. I examined him last Friday, and found a stricture near the bulbo-membranous junction; and my exploration was the cause of his last retention of urine. This is a very interesting point in connection with the examination of such strictures. Here I used the bulbous bougie, detected the stricture at the point above stated, passed it successfully with a capillary bougie, and the result was a retention of the urine—a very frequent thing after the exploration of narrow strictures. I was sent for two days after, and I found the boy unable to make water. His bladder was distended up to the umbilicus. Instead of trying to enter his bladder by the natural route, which would probably have been impossible, I punctured the bladder above the pubes with a very fine capillary trocar and with Dieuafoy's aspirator; within two or three minutes I had removed about a pint and a half of urine from the bladder, leaving, perhaps, a pint behind. This was on Sunday. I left on Monday, and I expect to hear from the patient this evening or to-morrow.

I think, now, with our present appliances, it would have been very bad urethral surgery to attempt to enter the bladder by the natural route. The risk of making a false passage by the ordinary instruments would have been very great; and the urethra at or

Digitized by Google

near the seat of the stricture, with small instruments, would have been more or less injured. I think this way of meeting these cases is probably the best method that has been yet used. The instrument is a French invention, but one of our own countrymen used it a few years ago. Dr. Dox, of Geneva, punctured a bladder nine times within a week with good results. Here are these interesting points in connection with these cases. The moment the bladder is relieved in this way, by the artificial canal, and often at the very time of the withdrawal above, urine will pass by the natural channel.

A case is related by Laffé, of Paris. He punctured the bladder once, and the patient was able to urinate by the natural channel within a very few hours.

Dr. NEWMAN—Mr. President and gentlemen: I hesitate in rising to speak on the subject of strictures, as it is too wide-spread to admit of a large discussion. But with your kind indulgence, I will make a few remarks.

I am very much pleased with the paper of Dr. Otis; and I believe that the method of dilatation, as described by him, is recognized as the best method of treatment. There is only one object in view, and that is to restore the diseased physiological anotomical tissue to its former character. If this can be accomplished by dilatation, I think it is the best method.

In detecting the stricture, I believe Dr. Otis uses the bougie; but I prefer the more natural instrument, the finger, no matter how large or small the stricture may be. I disagree with Dr. Otis that the stricture is best discovered in withdrawing the bougie. I find that it is detected by the touch of the finger's end immediately, as soon as the flexible bougie touches the stricture. But if you pass the stricture, the stricture loses some of its spasmodic action in withdrawing, and you don't feel anything.

Now, I refer to dilatation by galvanic cautery which I have tried with the best results in all cases. But this subject is too large and I will not detain the Society, except to refer to it. There have been some failures, but they were entirely due to the false method used—the power with which the electrode is used. If the power be increased too much, it will result in something that we wish to avoid—that is, the mucus lining of the urethra and the other tissue will be destroyed. The same in cutting; the mucus lining is destroyed, plastic lymph thrown out, and the stricture appears again. You do the very thing that you wish to avoid. We only

Digitized by Google

have a chemical absorption, without destroying anything, and failure is always the result.

The other point is, not to repeat the operation too frequently—to leave time enough between.

Paper referred to Committee on Publication.

Dr. Roosa—I rise to a question of privilege, for which I request the permission of the house.

The President—You have permission.

Dr. Roosa—A pamphlet has been circulated through the house, entitled "The true Object of Medical Legislation," by Dr. Stephen Rogers. There has, however, been inserted an addendum to one of the pages, in the handwriting of Dr. Rogers, to which I wish to call attention. I will first read a sentence from the pamphlet, which is as follows: "The number of diplomas which have been and are continually sold and issued by Medical Colleges to persons who are known to be of the worst possible morals, and to well known fraudulent and criminal advertisers, is by no means encouraging to contemplate." And there occurs, written in ink, and in the handwriting of Dr. Rogers, an asterisk and a foot note, as follows: "The New York University, Medical Department, for example." I am one of the teachers there, and in behalf of the council, and of the institution, I emphatically deny the correctness of this statement, and I wish to state that it has already been disproved in the columns of *The Medical Record*, and that the gentleman who makes it has been expelled from the Pathological Society of New York for a personal attack upon one of the professors, Dr. Alfred L. Loomis.

Dr. James R. Leaming, of New York, read a paper on "Plastic Exudaton within the Pleura." Referred to the Publishing Committee.

Report of the Treasurer of the Medical Society of the State of New York for the year 1872.

Balance in the treasury as shown by Treasurer's Report for 1871 ..... $378 93

Received from societies and institutions as follows:

No. of Delegates.	County Societies.	Paid by.	
4	Albany	Dr. J. S. Bailey, 1872	20 00
1	Allegany		
1	Broome	Dr. J. S. Burr, 1872	5 00

Digitized by Google

No. of Delegates.	County Societies.	Paid by.	
2	Cattaraugus	Dr. J. S. Wheeler, 1872	$10 00
2	Cayuga		
2	Chautauqua	Dr. T. D. Strong, 1872	10 00
1	Chemung	Dr. W. C. Wey, 1872	5 00
1	Chenango	Dr. G. W. Avery, 1872	5 00
1	Clinton	Dr. A. C. Butler, 1871–72	10 00
2	Columbia	Dr. M. L. Bates, 1872	10 00
1	Cortland	Dr. G. W. Bradford, 1872	5 00
2	Delaware	Dr. Ferris Jacobs, 1871–72	20 00
2	Dutchess	Dr. E. R. Holbrook, 1872	10 00
5	Erie	Dr. Jabez Allen, 1872	5 00
		Dr. Wm. C. Phelps, 1872	20 00
1	Essex	Dr. E. D. Ferguson, 1871–72	10 00
1	Franklin	Dr. S. P. Bates, 1872	5 00
1	Fulton	Dr. Eugene Beach, 1872	5 00
1	Genesee	Dr. J. V. Lansing, 1870	5 00
		Dr. L. B. Cotes, 1871	5 00
		Dr. W. B. Sprague, 1872	5 00
1	Green	Dr. W. B. Chase, 1872	5 00
	Hamilton		
1	Herkimer	Dr. E. Walker, 1871–72	10 00
2	Jefferson	Dr. F. B. A. Lewis, 1872	10 00
9	Kings	Dr. J. S. Prout, 1872	45 00
1	Lewis	Dr. F. B. Lewis, 1872	5 00
1	Livingston	Dr. W. E. Lauderdale, 1872	5 00
2	Madison	Dr. F. W. Root, 1872	10 00
3	Monroe	Dr. W. S. Ely, 1872	15 00
1	Montgomery	Dr. N. L. Snow, 1872	5 00
21	New York	Dr. J. E. Janvrin, 1872	105 00
2	Niagara	Dr. W. B. Gould, 1872	10 00
4	Oneida		
3	Onondaga	Dr. L. S. Tefft, 1872	15 00
2	Ontario	Dr. H. Jewett, 1872	10 00
2	Orange	Dr. S. C. Smith, 1872	10 00
1	Orleans		
3	Oswego	Drs. Clark and Stevens, 1872	15 00
2	Otsego	Dr. T. B. Smith, 1872	10 00
1	Putnam		
2	Queens	Dr. W. D. Wood, 1872	10 00
3	Rensselear	Dr. L. R. McLean, 1872	15 00
1	Richmond	Dr. H. King, 1871–72	10 00
1	Rockland	Dr. T. B. Smith, 1872	5 00
3	St. Lawrence	Dr. L. Sanborn, 1872	15 00
2	Saratoga		
1	Schenectady	Dr. A. M. Vedder, 1872	5 00
1	Schoharie	Dr. L. Cross, 1872	5 00
1	Schuyler	Dr. J. W. Thompson, 1872	5 00

Digitized by Google

No. of Delegates.	County Societies.	Paid by.	
1	Seneca	Dr. Lewis Post, 1870–71–72	$15 00
2	Steuben	Dr. Jas. J. Harlow, 1872	10 00
1	Suffolk	Dr. H. P. Terry, 1870–71–72	15 00
1	Sullivan	Dr. B. G. McGabe, 1872	5 00
1	Tioga		
1	Tompkins	Dr. M. M. Brown, 1871–72	10 00
3	Ulster	Dr. J. Hasbrouck, 1872	15 00
1	Warren	Dr. J. G. Porteus, 1872	5 00
2	Washington	Dr. A. A. Taylor, 1871	10 00
		Dr. B. R. Holcomb, 1872	10 00
2	Wayne	Dr. Solon Briggs, 1872	10 00
3	Westchester	Dr. J. Foster Jenkins, 1872	15 00
1	Wyoming		
1	Yates	Dr. W. Oliver, 1872	5 00

Received from institutions as follows:

Albany Medical College	
Bellevue Hospital Medical College, Dr. A. Flint, Jr., 1870–71–72	15 00
College Physicians and Surgeons, N. Y., Dr. F. N. Otis, 1869–70–71–72	20 00
Geneva Medical College	
University of New York	
University of Buffalo, Medical Department, Dr. J. F. Miner,	5 00
Long Island College Hospital, Dr. J. S. Wright, 1869–70–71–72	20 00
N. Y. Academy of Medicine, Dr. J. O. Pond, 1871–72	50 00
College of Physicians and Surgeons Syracuse University, Dr. W. W. Porter, 1872	5 00
Received from Merritt H. Cash Fund, Dr. J. H. Armsby, trustee	105 00
Received initiation fee of five dollars each, for the following named permanent members, 1872:	
Drs. Edwin Hutchinson, M. R. Holbrook, Chas. E. Rider, Le Roy McLean, A. C. Hull, Joshua B. Graves, C. G. Pomeroy, Arthur S. Wolff, J. L. Little, S. T. Clark, G. L. Halsey, T. H. Squires, N. Bozeman	65 00
From Dr. E. V. Stryker, for Diploma, recommended by the Censors of the Eastern District	10 00
Total receipts	$1,323 94

Expenditures.

Paid Dr. W. H. Bailey, for services as Secretary,	$250 00
Blank book	9 00
Expressage on Transactions returned	2 55
Marshal at City Hall	10 00

Digitized by Google

Paid Page, $5.00; Doorkeeper, $10.00	$15 00
Transportation of blackboard to and from room	2 50
Cash for postage	68 50
J. C. Butler (use of chairs and tables)	8 00
Harvey Edwards, stenographer (reporting)	60 00
Albany Publishing Company (advertising)	1 00
Stetson & Hawkins (stationery)	17 41
Dr. C. H. Porter, Treasurer (postage)	3 30
Argus Co. (printing)	160 70
Stetson & Hawkins (stationery)	43 55
Total expenditures	$651 51
Balance in Treasury Feb. 5th, 1873	672 43
	$1,323 94

Societies, Institutions and Individuals in arrears with the Medical Society of the State of New York, February 4th, 1873.

SOCIETIES.

Delegates.			
2	Cayuga Co. for the years	1871–72	$20 00
2	Chautauqua Co., "	1871	10 00
1	Essex Co., "	1869–70	10 00
4	Oneida Co., "	1871–72	40 00
1	Orleans Co., "	1869–73	25 00
2	Saratoga Co., "	1871–72	20 00
1	Suffolk Co., "	1872	5 00
	Total		$130 00

INSTITUTIONS.

Albany Medical College, 1872	5 00
University, New York Medical Department, 1870–71–72,	15 00

INDIVIDUALS.

The following named gentlemen, elected permanent members in the years stated, have not paid the initiation fee of $5.00 each:	
Elected 1871, Dr. William Van Pelt; 1872, Drs. Henry H. Green, P. F. S. Pruyn, C. C. Murphy	20 00
	$170 00

The Treasurer's report was referred to the following Auditing Committee, appointed by the Chair: Drs. J. V. COBB, H. CORLISS and P. P. STAATS.

Digitized by Google

Dr. Eliot offered the following resolution:

Resolved, That candidates elected to permanent membership who neglect to pay the fee required by our by-law, for one year from the date of their election, shall forfeit their rights as permanent members. Adopted.

Dr. A. N. Bell read his report on the Quarantine Establishment of New York, being a report of the Committee on Hygiene.

Dr. Frazier reported as follows: "Your Committee, appointed to invite the Governor and medical gentlemen who are members of the Legislature, have performed their duty." Received.

The Chairman of the Business Committee announced that Dr. A. B. Burger, of Saratoga county, would present a specimen of a diseased kidney, and give a description of the case. (A kidney weighing three pounds was then exhibited to the Society, and Dr. Burger remarked as follows:)

Dr. A. B. Burger—Mr. Chairman and gentlemen: I bring this specimen here for my younger brothers in the profession to look at—the old war horses have seen many before.

The history of the case is this: The last of December I was called to see this man and learned that he was taken very suddenly ill in the morning while milking his cow. His wife waited for him to return to breakfast, and finally she went out and found him lying upon his back. She called upon the neighbors and they carried him into the house. He put his hands to his head and said, "Oh, my head!" As I entered the house I heard very loud breathing, and I said I didn't think from the indications that he could live. I inquired what was the matter with him, and she said there was a doctor in the room who said it was heart disease. I went in and found him in a state of coma; very much flushed; pulse 120, regular but weak; temperature of the body, 104°; limbs somewhat swollen; bladder distended. I spoke to the doctor and asked him if he had done anything. He said he had only made a cold application. He said he thought it was a doubtful case. I said, "I think you are right." In twenty minutes after the man expired. Immediately after he expired he turned as yellow as gold—very yellow—but that soon disappeared. I suggested a post-mortem examination. He died so suddenly that I didn't know what it was; it might be congestion of the brain. The wife consented and the examination was made. The liver was of the normal size, but what we call slaty liver, pale, with white spots all through. When we

Digitized by Google

got to his kidneys we found they weighed three pounds each—both were alike. We had nothing to guide us. We asked his wife if there had been any difficulty, and she said no, only he complained of pain in his back. His urine was like spring water. I took this kidney, and on my way home it froze, and I have kept it in that condition. Some portions are very white and others red.

Now, gentlemen, I leave it for you to decide in regard to it.

Dr. WM. T. LUSK read a paper on the "Pathology of Labor Pains."

The Committee on the Treasurer's report reported that it was correct, and on motion the report was accepted.

The Chairman of the Committee on Arrangements and Receptions introduced to the Society, Drs. M. H. EDDY, of Middlebury, Vt., delegate from the Medical Society of the State of Vermont; JOHN J. H. LOVE, delegate from the New Jersey State Medical Society, and S. L. F. SIMPSON, of Concord, New Hampshire.

Dr. GURDON BUCK—I beg leave to submit to the Society a case of loss of the entire under lip, in which a number of operations were successively performed to restore it. The patient was a lad of thirteen years of age, of rather delicate constitution, who came under surgical treatment in October, 1869, in consequence of the loss of the entire under lip from the effects of scarlet fever, as reported by his mother, who gave an account of his case to this effect: When six years of age he was taken ill with scarlet fever. The eruption was scanty, and in other respects the disease was irregular in its development. He was dangerously ill; and in the subsequent progress of the disease, sloughing took place, which invaded the entire lip, and was accompanied by inflammation and swelling, involving the lower jaw on both sides. Consequent upon this, necrosis followed, involving the body of the lower jaw, and on the right side the right half of the bone, from the symphysis to the last molar tooth, was cast off entire, and the alveolar sockets of all the teeth could be recognized, with the exception of the last molar, which remained *in situ* within the mouth.

On the left side the exfoliation was much more limited, involving a portion of the alveolar border containing the sockets of the two bicuspids and two molar teeth.

Notwithstanding this loss of the jaw on the right side, the deposit of bony matter took place which maintained the form of the jaw, and afforded solid support, so that the symmetry of the two sides of

Digitized by Google

the face was not disturbed. The right half of the under surface of tongue was adherent throughout to the floor of the mouth, so that the end of the tongue, from the absence of the lower lip, was constantly exposed, as you see in this cast. (Exhibiting it.) The effect of this upon his articulation was scarcely noticeable. It was remarkable how little it was affected. The greatest annoyance and discomfort that the patient experienced was the constant flow of saliva. The angles of the mouth were not invaded, but, as seen in this cast, were somewhat drawn down by the contraction of the neighboring parts, and had the vermilion borders still intact. The upper lip was of ample dimensions.

On the sixth of October, 1869, the first operation was performed. The presence of the tongue, fixed as it was in this position, was regarded as a serious obstacle to the success of the operation which was to be performed; and it was at first thought that a portion of this might be removed so as not to interfere with the reconstruction of the under lip; but this was abandoned. Its liberation, though practicable as an immediate result of an operation, would not be followed by any permanent improvement. So the operations were commenced without any interference of the tongue. The first operation consisted in detaching, on the right side of the face, the cheek from the bone as low down as the edge of the jaw, and as far back as a little beyond the anterior edge of the masseter muscle. An incision was then made, a half an inch below the angle, so as to save every portion of the vermilion border that existed, and carried outward, and then in a curved direction over the cheek upward to a point a little below the middle of the zygoma, the convexity of the curve looking posteriorly. This flap was dissected up from the jaw and the masseter muscle. The lining mucus membrane was then divided upward along the edge of the masseter muscle, and its division continued upward along where it is reflected from the jaw to line the cheek as far as the canine tooth, so as to have its interior extremity reach the symphysis.

The same procedure was applied to the left side. It will be remarked that on the right half of the cheek the skin has been destroyed further down—more extensively than on the left half. This skin was trimmed so as to leave it of an angular form, the angles situated in the median line with a view of its adaptation to the flaps when brought forward. The two lateral flaps were now glided forward and their extremities made to meet at the symphysis with the vermilion border of both accurately confronting each other.

Digitized by Google

With two pin sutures they were secured below the vermilion border, and at the vermilion border by three fine thread sutures. The remaining lower edges on either side of these two flaps were then adjusted to the edges of the skin previously prepared, as already described, by as many sutures as were needed to effect a very exact coaptation. The bare surfaces on the cheeks, that were left exposed after the transfer of these flaps, were then closed up by dissecting up the edges from which the flaps had been detached outwardly and stretching them forward to meet the outer edges of the transferred flaps. This was accomplished without any strain upon the stitches, and in that way there was no raw surface left uncovered.

The effect of this new adjustment is seen in this cast. The upper lip is folded upon itself; the angles of the mouth are drawn around and become a part of the new lower lip which is now retracted and dense, and overhung by the advancing upper lip.

The union was secured after this operation almost throughout, with the exception of a point that I will now notice. And here the presence of the tongue was found to be a great disadvantage. The presence of the tongue behind the newly adjusted flap on the right side, exerted constant pressure against it, and disturbed the adhesion and allowed the escape of saliva through the wound. Every possible effort was made to prevent this, but at length was unavailing, so that on the right side of the chin a narrow aperture remained of nearly two inches in length, extending nearly to the symphysis where union failed to take place, and the edges cicatrized independently. Elsewhere primary union took place throughout. Special care was required to maintain the support of the sutures where the lateral flaps met in the line of the symphysis. That was a vital point in the success of the operation, and that was a point where the sutures were exposed to the greatest strain; and every effort was made to maintain that support to such a degree that the sutures should not be subjected to any stretch and consequent ulceration.

This operation, which was performed under the influence of ether, and occupied about two hours, requiring, as it did, such extensive incisions, was accomplished without considerable loss of blood, care being taken to secure the divided vessels as fast as they were encountered; and the patient evinced no very great degree of depression from the immediate effect of the operation. The only disturbance from the ether was a single attack of vomiting which simply emptied the stomach of the blood that had been swallowed by the patient during the operation.

Digitized by Google

With the mouth made into this shape, the administration of nourishment was not materially interfered with. The absence of teeth restricted the patient to the use of liquid and soft nourishment, and precluded the using of hard food. His mother was very successful in managing that matter, as she had had long experience; so that the operation itself did not materially interfere with the administration of a sufficient supply of nourishment.

The amount of inflammatory swelling was not excessive.

Dr. Lewis A. Sayre, permanent member from the county of New York, read a paper on "Diastasis of the Head of the Femur, and Formation of an Artificial Hip-joint," illustrating it with a specimen.

Dr. J. V. P. Quackenbush read a paper on "Hydrorrhœa."

On the recommendation of the Chairman of the Business Committee, the order of business was suspended, and Dr. E. R. Squibb read the following report of the Committee on Medical Ethics, on the matters relating to the Niagara County Medical Society:

The Committee on Medical Ethics, to which was referred the question of the admission of delegates from the Niagara County Medical Society, reports, that so far as they can make out, the facts of the case are as follows:

At a meeting of the Niagara County Medical Society, held January, 3d, 1871, nine of the forty members being present, a resolution was passed declaring the Society disbanded. Immediately thereafter, these members organized themselves into a new Society, bearing the same name and under the same officers. The reason alleged for this action was, that under the old organization it was not possible to enforce discipline among the members. The delegates named by this self-constituted body presented themselves for admission into this Society at the meeting of February, 1871. At the same time a protest, signed by Doctors Tryon, Fasset, and others, against the recognition of this new organization, was presented. The following report was finally made by the Committee on Medical Ethics, to which the matter had been referred, and was adopted by the Society (p. 79, 1871).

At a meeting held June, 1871, they did reorganize, in accordance with the recommendation, and adopted a constitution and by-laws which had been submitted to Dr. White, as Chairman of the Committee on By-laws, and approved by him.

They therefore claim to be truly the Niagara County Medical Society; constituted according to the recommendation of the Society;

Digitized by Google

subsequently recognized by it in various ways, and entitled to representation.

It is claimed, however, by a number of the original members of the Society, that the reorganization is rendered invalid by the action of the President, who subsequently declared under oath, as President, that the Niagara County Medical Society was organized in 1871, and that the Society organized in 1823 was disbanded in 1871; that they were a new Society, and totally repudiated the old organization.

Acting on this assumption, they issued a call for a meeting of the members of the Niagara County Medical Society, and at this meeting, held the first Tuesday in June, 1872, elected a President and other officers, and now ask recognition of the Society.

Without entering into an argument which would consume too much of the valuable time of this Society, your committee will merely state the conclusions at which they have arrived.

The act of disbanding the Society was null and void.

That in acting under the advice of this Society in June, 1871, the Medical Society of Niagara county of 1823 was again in full operation.

That although we think Dr. Clark was in error in stating that the Society dated from 1871, and not 1823, yet this statement could not render the previous proceedings invalid. We therefore propose the following resolution:

Resolved, That this Society recognizes the organization in Niagara county, of which A. G. Skinner is now President, and J. L. Buchner, Secretary, as the Niagara County Medical Society, and will receive Rexford Davidson and Charles N. Palmer, delegates regularly appointed by said Society.

THOMAS HUN,
Chairman of Committee on Ethics.

ALBANY, *Feb. 5th*, 1873.

Dr. SQUIBB then added:

I may state verbally here, without any express authority of the Committee however, that the Committee had to decline any personalities in this matter. They had to refuse all recognition of the motive or spirit which actuated these gentlemen at their homes. We know nothing about it, and, in the capacity of Committee, care nothing about it. We care very much about it as members of one grand society, but these gentlemen must settle their personal difficulties at home. This Committee has refused—and this Society

Digitized by Google

ought to know it—has refused to hear them. Now, that seems like choking off. But we have refused upon the ground that we cannot get their statements to harmonize at all with each other. Therefore, as we have not the means to ascertain which is right and which wrong, we drop entirely, the personal feature. And in this particular the Committee has desired to get at the truth and to do justice, and we propose the result now for the adoption of the Society.

On motion of Dr. Eliot, the report was unanimously adopted without discussion.

An Obituary of Dr. P. Van Olinda, was presented by Dr. A. Vanderveer, which was read by title and referred to the Committee on Publication.

The Society then took a recess until 2:30 P. M.

Afternoon Session.

The meeting was called to order by the President.

Dr. A. T. Douglas and Dr. Robert Newman, delegates to the Connecticut State Medical Society reported that they attended the Convention at New Haven, and were pleased with the character of the proceedings.

Dr. Hiram Corliss, delegate to the State of Maine Medical Association, reported that he had attended the annual meeting of the Maine Medical Association, at Portland, and was gratified with the proceedings and with the genial fellowship of our Eastern neighbors. He gave a pleasing description of Portland and its public institutions and public works, especially its hospital and water works.

Drs. Gurdon Buck, Robert Newman and T. Blanch Smith, delegates to the New Jersey State Medical Society, reported that they had performed their agreeable duty as our delegates to Patterson, New Jersey, and found the State Society of New Jersey in a healthy condition. A cordial welcome was extended to our delegation, and they left well pleased with the profession of our sister State.

Dr. A. Jacobi, of the Committee on Foundling Asylums, made the following report:

Two years ago this Society appointed a committee, consisting of Dr. White, Buffalo; Dr. Dean, Rochester; Dr. Th. Hun, Albany; Dr. Hutchison, Brooklyn, and Dr. Jacobi, New York, to investigate and report at the meeting of 1872 upon the following subjects:

Digitized by Google

1. The causes of the fearful mortality of abandoned infants in general, and those in large institutions in particular.

2. The reasons for the giving up of large institutions and the success of the dispersing system for abandoned infants in every country of Europe, where the preservation of lives was an object.

3. The causes of the unusually large infant mortality in the institutions in charge of either public or self constituted authorities in New York city and State.

4. The plans and means for improving the condition of foundlings and abandoned children in New York city and State.

a. During their infancy when they are most subject to disease and death.

b. During childhood and adolescence, when they require an education sufficient to make them useful members and prevent them from becoming enemies of and dangerous to society.

That report has been presented here a year ago. When parts of it, and the general conclusions of the same had been read, it was, after a short discussion, resolved to accept the report, to continue the committee, and to add the name of Dr. Joel Foster, New York, who had participated in the discussion and appeared to promise valuable contributions to its working and results.

The committee again appears before you to claim your attention, this time for a few minutes only, but for some final expression of your appreciation of its motives and endeavors.

The report has been published in *The Medical Record* of November 15, 1872. Thus it has been before you for some time, and may have been read by not a few. Those who have read it, we fully believe, will feel as positive as we do, of the absolute conclusiveness of the final results of our investigations. Those who have not read it, are well prepared, by their knowledge as medical men and their sentiments and convictions as practical humanitarians, to judge of their merits. Thus we again submit for your adoption and support, the conclusions of the report of last year which read as follows:

That the life and health of every infant is, both economically and morally, of paramount importance to society and the commonwealth.

That it is the duty of society and of the State to grant every infant the possibility of living and obtaining an education.

That it can under no circumstances free itself of its responsibilities by throwing them on private individuals; but should take care of every infant deprived of its parental protector, by death or incompetency.

Digitized by Google

That science and experience have united on certain principles to be observed in the raising of the young.

That human breast-milk is more appropriate than artificial food; the country more wholesome than a large city, and an inferior private dwelling better adapted than a large overcrowded institution to the raising of an infant.

That the practice of uniting lying-in asylums with infant asylums or hospitals is a direct source of dangerous disease and fearful mortality.

That the accumulation of many infants under one roof, under the best possible circumstances and with as gentle care as is observed in New York State and city, is conducive to ill health and unavoidable mortality; this system having been given up in Europe for this very reason.

That, according to the statistics of our own large infant asylums, especially the Infant Hospital, under charge of the Commissioners of Public Charities and Correction; the Catholic Foundling Asylum, under the charge of the Sisters of Charity; and the Nursery and Child's Hospital, under the charge of a board of lady managers—all in New York city—their infant mortality was immense and equal to the mortality of the large foundling hospitals of Europe before a radical change in their system of management was instituted.

That the necessity of distributing abandoned infants among private families, especially in the country, is urgent.

That the Medical Society of this State recommend such a change in the manner of caring for abandoned infants.

That the State should see that this change be made as speedily and fully as possible by all the public and self-constituted authorities concerned in the care of foundlings, inasmuch as it has positive responsibilities towards every member of society in general and the young and feeble in particular.

That, however, the State should not interfere with private charity towards foundlings, so long as the interests of the infants and the commonwealth are not injured.

That the State ought not to be held responsible for expenditures not incurred by itself nor under its own control; that private charitable societies should not assume duties beyond their own means, and in particular, that, while private charity and enterprise must be encouraged, private ambition and officiousness must not be indulged in at the expense of the tax-payers.

That, therefore, where private individuals or corporations ask the

Digitized by Google

commonwealth for permission to administer charity on a large scale. under the rules and regulations of a charter, this permission and charter does not involve that the State should be tributary to such individuals or corporations.

That, as medical men and citizens of the republic, we are of the opinion that the maintenance of large institutions for the care of foundlings, by the payment to them by the State of eight dollars per head per month is not productive of good results.

That the probability or possibility of frequent changes in the administration of such institutions, which are, moreover, liable to be placed under the charge of persons whose qualifications for the solution of questions of the greatest difficulty and importance is frequently doubtful, is a source of great danger to both the infants and to the commonwealth.

That the supervision and control of all the abandoned infants of the State belong alone to the State; no matter whether they are sustained by the State or by private individuals or corporations.

That we see in such supervision and control no unrepublican centralization, but the performance of a duty of the commonwealth towards the feeble and dependent young.

Your committee recommend that the conclusions of this report be adopted by the Medical Society of the State of New York as best adapted to the requirements of humanity and science, and laid before the Legislative body of this State as the expression of its views.

We might go further and say that we, citizens and tax-payers, protest against squandering our and the people's means on institutions gotten up in good faith and for laudable ends, but abortive in their results, dangerous through their effects, and destructive both to the public treasury and to the lives of the young. Year after year time and efforts of individuals and corporations are spent in the attempt at obtaining a large share of the public income for private charitable or so-called charitable institutions. All of us who have studied the list of such establishments as participate in the bountiful distribution of public funds, know with pangs of sorrow and disgust that this distribution, in many of the items, is injudicious, and better adapted to serve private ends than the requirements of charity or the public good. We do not pretend to legislate for the consciences of our legislators as elected by the people, but we insist upon public resources not being decreed away upon the recommendations, pleadings and lobbying of private individuals. We insist upon our voice

Digitized by Google

being heard in these matters which we, strengthened by our knowledge of the scientific facts, and by a careful study of the results of both scientific and unscientific experiences, believe we understand better than those who, not fortified by knowledge, are easily misled by sentimental representations, and high-phrased eulogies of alleged or supposed charity. At all events, we insist upon the State Board of Charities, or another appropriate and well-informed board to have full power to investigate the claims of those who mean to thrive at the public expense, or pretend to carry the load of public duties on private shoulders. And we beg and pray that the legislature of this State may not forget that the tax-payers in the community may be remembered when public funds are distributed broadcast in mis taken liberality, and that the earnest humanitarians will never be the importunate leaches of the treasury. And we also beg that when the claims of private persons or societies are considered valid, because of the praiseworthiness of their undertakings, before their request be granted, and large amounts of public funds legislated away, the question be answered, if those amounts are, or are not, in an undue proportion to the results promised, claimed or obtained.

All of which is respectfully submitted, and, together with our report of last year, recommended for adoption.

Dr. Thomas Hun, Albany,
Dr. White, Buffalo,
Dr. Dean, Rochester,
Dr. Hutchison, Brooklyn,
Dr. Jacobi, New York,
Committee.

A minority report on foundlings and foundling institutions was read by Joel Foster, M. D., of New York.

This report received the attention of the Society, and after the respective merits of the two reports were considered, the majority report was accepted and adopted.

Dr. Kendall, of Baldwinsville, offered the following:

Resolved, That the by-laws of this Society be altered, so that section eleven of paragraph three shall read as follows:

¶ 3, § 11. At the annual meeting, at the close of the morning of the first day, the members of the Society shall be organized into eight committees, by Senatorial districts, as established by the law of 1836, the members present from each district constituting one committee, each of which shall elect one member; the members thus

Digitized by Google

elected, with one appointed by the President, as chairman, shall constitute the committee on nominations.

On motion by himself, it was laid on the table for future discussion.

Dr. STORCK, of Erie county—I wish to offer the following resolution:

Resolved, That the bill entitled "An act relative to the Medical Laws of the State of New York," passed by both houses of the Legislature of last year, but vetoed by Governor Hoffman, meets with the approval of this Society.

Resolved, That a committee of three be appointed by the Chair to take all necessary steps to secure the passage of said act by the Legislature during its present session.

I call the attention of the Society to the fact that the bill was passed last winter by both houses, but was vetoed by Governor Hoffman, as I understand, on the recommendation of some gentlemen of Albany.

The provisions of the law are about the same as the law of the State now provides, but it also provides that no person shall practice physic, medicine, surgery or midwifery without being duly legalized to do so by law.

At the last meeting of the Erie County Society, the society passed unanimously a resolution appointing a committee to draw a memorial, to be laid before the society, and to be urged upon the Legislature to incorporate in that act provisions to prohibit persons from practicing medicine without being duly legalized or duly authorized to do so by law. I think the law, as it was passed by the Legislature, meets with the wishes of the profession generally. There may be some objectionable features in that bill, but still I believe it is due to the public, as well as to the members of the profession, that such a law should be passed which will protect the public in their dearest rights of life and health, as well as the members of the profession in their rights. The law is general; it makes no distinction, it is true. And I don't believe that it is our duty to throw ourselves on our dignity in making distinctions if the law of the State of New York makes none. But I believe it is our duty as members of the profession to see to the passage of a law which will protect the public from the dangerous practices of ignorant quacks, who are so numerous, particularly in the larger cities. And there is no class of physicians that does not suffer as the public suffers from their influence. We may cite many instances where death has been produced

Digitized by Google

by the practices of these quacks, females and males. And I think it is the duty of this Society to recommend to the Legislature the passage of this law, which has already been once passed by them.

As I might say from my stand-point, there is no class of physicians that suffers so much from quacks as the German physicians, of whom I am a representative in Buffalo. We have these quacks by the dozen. You have them in New York and Albany and everywhere. Why should not these men and women be excluded from the practice of medicine when the life and the health of the public generally is endangered by their practices? We need not fear, perhaps, the practices of other classes of physicians, as long as they hold a diploma, as long as they are recognized by the law. But we should fear, the public must fear, and particularly the ignorant classes of the people must fear the dangerous practices of ignorant quacks who have never studied anything, but merely rely on the prejudices and ignorance of the public. I hope the resolutions will be adopted by this Society.

Dr. Vanderpoel—I scarcely know the points of this law, but on general principles I am opposed to this species of legislation. I think the less the Legislature bother with our diplomas, and the less we throw ourselves upon their protection, the better for our profession. I have never yet seen the time when men who were well educated in their profession, and who appreciated fully the responsibilities and duties conferred upon them, have not had the confidence of the public; and you generally find that the class of people who throw themselves upon the protection of the Legislature, are the very weak brethren in the profession. I do not care whether I have a parchment or not. If I cannot demand compensation for my services because of their value, I would rather sink than throw myself behind the barrier of a legislative enactment. We went through this very thing twenty years ago—there is not one here but knows it—the Legislature abolished all these barriers; and I should be very sorry to see a retrograde movement in this respect. (Applause.)

Dr. Squibb—There is another point of view which I beg to throw out. There is a certain class in the community who will employ quacks, and we cannot control them. We know that in the case of abortionists the more secret they are, the better is their practice. Quacks cannot be brought within legislative control unless our police establishments are made very much more effective than they ever have been. I think medicine must police itself and legislate for itself; and I think its only safety lies in its so doing.

Digitized by Google

Dr. E. M. MOORE—The gentleman from Buffalo is probably unaware of the stage we have passed through, as Dr. Vanderpoel has just said. I think it was in the year 1844,—it sounds a good way back,—I was the youngest member of a committee of three, to petition the Legislature to abolish the laws for the purpose of enabling physicians to collect fees for medical services. We did this just at that time, with one of our members in the Senate of the State, for the purpose of getting rid of one of the most vexatious, pestilential set of wretched quacks, that it has ever been my misfortune to come in contact with. They were making a handle of the fact that we had the power to go on and practice, and collect our fees, while they could not; and for that reason all their fees must be paid in advance. And, of course, it was so specious a thing that no argument could be brought against it; and we felt the annoyance of it so much as to request the Legislature to abolish the law; and we have never regretted doing it. It was undoubtedly a good move, and if we could cut free from the Legislature entirely, I should be satisfied. For that reason, Mr. President, I think that we should not entertain any such project whatsoever—give it the go-by.

Again, I will remind the gentleman, whom I recognize to be a German—indeed he alludes to the fact that he is a German—that some of the most outrageous quacks have come from Germany—homœopathy, hydropathy, and mesmerism. Now there is no mind at present, upon the face of this planet, that controls human thought more perfectly than the German mind; it is really in advance of the world, but it also, sometimes, seems to take long strides in queer directions; and we must recollect also that there is no country in the world where the business of legislating exactly how a man shall go to bed; and how he shall get up; how he shall eat his breakfast; how he shall do everything, is carried to such perfection as it is in Germany. And just through all this, and in spite of it, these things have grown up and have been transplanted into this country, and now we are suffering from them; and therefore the poorest remedy we can have will be from the Legislature of the State of New York. (Applause.)

On motion, the resolutions were laid on the table.

Dr. ROBERT NEWMAN offered the following:

Resolved, That when we adjourn, we adjourn this annual meeting to the fourth Tuesday in September, for the transaction of executive business.

Digitized by Google

Resolved, That after this year the annual meeting be held at Albany, on the fourth Tuesday in September.

Resolved, That the Secretary be authorized to make this amendment of the by-laws legal, if legislation is required.

After much discussion the whole subject was laid on the table.

Dr. B. L. Hovey read a "Report of five consecutive cases of Colles's Fracture."

Dr. John P. Gray exhibited twenty-one Photo-Micrographs of brain tissue.

Dr. Gray said: I do not propose to occupy the attention of the Society with any remarks upon the subject, because as yet, we have not accomplished sufficient to enable us to draw any conclusion.

A few years ago special means were asked of the Legislature to enable us to make more thorough investigations than we had been able to before, to enable us to procure an expensive microscope, and employ a special micrologist to devote his attention to the subject. All the preliminary work has been done. A very admirable instrument was procured through the aid of the Assistant Surgeon General of the United States. A difficulty then arose as to taking these photographs which required some months to obviate; but finally we have been able to secure all the necessary apparatus to take photo-micrographs.

These twenty-one photographs were taken from sections made by Dr. E. R. Hun, the special pathologist, and Dr. Kempster, one of my assistants, who worked with Dr. Hun in this matter. The photographs themselves were taken from negatives by Dr. Kempster. It was necessary, really, for one of the physicians to acquire a knowledge of the art of photography in order to do the work.

In making a careful microscopic examination a year and a half ago, Dr. Hun observed on one of the slides prepared—even when holding it to the light, but very plainly under the microscope—certain granular appearing spots. A number of similar cases have since been examined. It will be observed in looking at these, that there is no uniformity in the points of degeneracy noticed, either in form or appearance.

These photographs have been taken from sections made from various brains, some with acute mania, some with dementia, and some with epilepsy. It is our intention to endeavor to have sections made of an entirely healthy brain, of every part of the brain, and have them photo-micrographed as representative of sound tissue, and to follow

Digitized by Google

that up with cases of diseased brain. We have not been able to determine, neither have we made sufficient experimentation to determine the exact character of the degenerated points observed.

Dr. H. KNAPP read a paper on "Hemiopic and Sector-like defects of the Field of Vision, and their connection with Diseases of the Heart and Brain." Referred to the Committee on Publication.

Dr. J. P. PALMER read a paper on Spotted Fever. Referred to the Committee on Publication.

Dr. CORLISS read the "Biography of Dr. B. P. STAATS," of Albany.

The following papers were read by title:

"Three cases of Abscess and Pelvic Peritonitis from Ulceration of the Appendix Vermiformis relieved by Operation," by Dr. R. B. Bontecou, of Troy; "Complete Dislocation of the Tenth Dorsal Vertebra Forwards," by Dr. Graves, of Steuben county; "On the Use of Atropine in some Diseases of the Eye," by Dr. Edwin Hutchinson, of Utica—sent as a communication by the Oneida County Medical Society.

Dr. BABCOCK reported for the Censors of the Eastern district that they had examined E. V. Stryker, and found him well qualified, and recommended him as a proper person to receive a diploma from this Society.

Signed by JAS. L. BABCOCK,
P. MCNAUGHTON,
C. C. COVELL,
Censors.

The Society adjourned to meet at 8 P. M., at the Assembly Chamber, to hear the address of the President, after which to attend an entertainment given the Society by the Albany County Medical Society, at Perry Hall.

The Society convened in the Assembly Chamber at eight in the evening—the meeting was called to order by the Vice President, Dr. B. F. SHERMAN, after which the PRESIDENT delivered his Annual Address upon "Some of the Relations of the Medical Profession to Education."

Upon motion of Prof. JAS. MCNAUGHTON, the thanks of the Society were extended to the PRESIDENT for his very able and instructive address, with the request that a copy be furnished for publication. Unanimously adopted.

Upon motion, the meeting adjourned to meet at 9.30 Thursday morning.

Digitized by Google

THIRD DAY.

The PRESIDENT called the meeting to order at 9.30 A. M.

Prayer was offered by the Rev. Mr. REEVES.

The minutes of yesterday's sessions were read and approved.

Dr. VANDERPOEL, Chairman of the Committee on the President's address, made the following report:

The Committee appointed to consider such portions of the Introductory Address of the President, as suggested action on the part of the Society, respectfully report:

That the allusions of the President, to the subject of the more general diffusion among the profession, of knowledge on subjects connected with Hygiene, are most opportune, and deserve the hearty indorsement of this Society. That so far from practitioners residing out of the large centers of population being indifferent, it concerns them in a most especial manner. The whole class of preventable diseases arising from blood poisoning fall now as commonly to the lot of the country physician, as to the city worker. The character of the soil, the location of the barn-yard, the relation of wells to surface drainage and sinks; these with many other matters should attract his attention in every family he visits.

While, therefore, it is recommended that the standing committee on Hygiene of this Society be requested to continue their active efforts in the development of facts bearing upon the elucidation of this subject, we most strongly, in compliance with the suggestion of the President, recommend that every County Society should have a standing committee, who should gather every fact in their respective localities, bearing upon the subject, and after discussing them in their own Societies, should forward them, with such opinions and deductions as they may form, to this body, as material for the use of the Committee on Hygiene. General interest in the study will grow up in such localities, causes of disease will be recognized which heretofore the physician had been indifferent to; while their aggregation in the hands of this Society will go to establish sanitary laws, which observation in limited localities fails to establish.

As a legitimate sequence of growth of such a system in the collection of facts, a central Bureau at Washington will give more authoritative expression to such principles.

The subject of giving a more permanent character to the membership of the American Medical Association, also meets the hearty approval of this Committee, and we recommend, not only con-

Digitized by Google

ferences with sister State societies with a view to promote this object, but also that a resolution be forwarded to that body, as the expression of that idea by this Society.

We also recommend that the Committee on Ethics, as now organized, be continued until discharged by vote of the Society, and that all questions pertaining to their committee, be referred without debate.

The recommendations in regard to the care of epileptics and paralytics are in accordance with the demands of medical science and the dictates of humanity. There are in the county poor-houses and other county receptacles, as well as in private families, in this State, a large number of these helpless people. In Europe much attention has been given to the care and treatment of epileptics and paralytics, and suitable hospitals established for their reception, no less than six institutions being in London alone. In the State of New York epileptics, at public charge, are generally treated as common paupers, and the disease ignored. A few of the most dangerous and troublesome are sent to the asylums for the insane, where, as the President justly remarks, they are a source of annoyance, and are improper cases for treatment among the insane.

Your committee would recommend, as the sense of this Society, the establishment of a State hospital for epileptics and paralytics. With a view of giving practical force to this recommendation, they would suggest the following resolutions:

WHEREAS, There are in the State of New York a large number of epileptics and paralytics, for whose treatment and custody no proper or adequate provision exists, and who are mostly of the pauper and indigent classes; and,

WHEREAS, These unfortunates, from the nature of their malady, are unsuitable persons to be kept in private families, and are not only sources of distress, but often dangerous to themselves, their families and community; therefore,

Resolved, That it is the sense of this Society that proper provision for the custody and treatment of epileptics and paralytics requires the establishment of a special State hospital.

Resolved, That a committee of three of this Society be appointed to bring this matter to the attention of the Legislature, for the purpose of securing the necessary legislation.

The remarks in the President's address relating to medical education, your committee find eminently just and timely.

While giving due credit to the medical schools for the benefits

Digitized by Google

received by the medical profession at their hands, and while disclaiming any spirit of intrusion or dictation, yet it maintains that the schools in their turn should listen and pay due deference to the reasonable wishes, and to the mature convictions of the profession, of which the State Medical Society asserts itself the legitimate organ.

This Society has numerous proofs of the desire of the Faculties themselves, to elevate the standard of medical education; it is, too, well aware that the principle of voluntary action, which has called them into existence, and still maintains them, could not yet have succeeded in accumulating such funds as are required to organize a perfect *curriculum*. Much time must necessarily elapse before the colleges will be possessed of larger endowments, either by private munificence or by government assistance.

But while the State Medical Society pledges itself to labor incessantly to assist the medical colleges directly and indirectly, by influencing public opinion to grow up to the necessities of the time, it has a right to expect on the side of the Faculties, not merely a laudable effort for the maintenance of their existence, but also a loyal attempt to elevate the standard of medical instruction by *such means as they possess.*

Your committee coincide fully with the suggestions of your President, that it is possible *now* to exact by a more rigorous rule a higher standard of preliminary training on the side of the young men who offer themselves for matriculation; we deem it, with your President, possible *now* to "lengthen the scholastic sessions;" to harmonize the disproportion between clinical instruction and theoretical training by improved anatomical and physiological laboratories; to organize post-graduate courses; to so "modify the methods of lecturing as to divide the students into classes, and fix the studies to be allowed for each successive grade; to so perfect the plan of recitations as to diminish the time given by younger students to lectures and to increase the time given to recitations; to bring meritorious young medical men to do many of the duties performed by similar officers in academic colleges."

In this manner, with the means already at hand, it could be reasonably expected "that greater thoroughness in the work done for and by the students during college life, a higher result in real education, and a corresponding elevation in the profession itself would be the result."

Resolved, That this Society recommend to the Board of Regents

Digitized by Google

of the University of New York the appointment of a Board of Examiners for the purpose of determining the fitness of candidates for the degree of Doctor in Medicine, according to the act passed during the session of 1872.

Resolved, That this board be composed of nine members, eight to be permanent, and one to be, *ex officio*, the President of the State Society.

All of which is respectfully submitted.

S. OAKLEY VANDERPOEL,
JOHN P. GRAY,
E. KRACKOWIZER,
Committee.

On motion of the Chairman of the Business Committee, the discussion of the report and resolutions was postponed, to allow Dr. C. A. ROBERTSON to read a paper entitled "Cases in Practice."

The following discussion was then had upon the suggestion of the PRESIDENT relative to an act passed by the Legislature for the appointment of a Board of Examiners, and the resolutions offered.

Dr. MOORE—In reference to this matter I might say that the act was passed, as I learned, by the influence of our homœopathic brethren.

I had a conference yesterday with Mr. Pruyn, Chancellor of the Board of Regents, and from him I learned that it was a movement emanating from New York—a movement emanating, as a matter of course, in the deep interest of our homœopathic friends, and for the great advancement of New York.

This impression seems to have been made very firmly upon the Board of Regents, and they in the first place attempted to have a mixed board, knowing, as I suppose, that such a board would be at once rejected by us—intending probably to throw some *onus* upon us. And I was consulted about this, before I came, by the member from our region, and this was the only proposition that was presented to me. My information to him was that, *nolens volens*, no such board could be constituted; that if the Regents must have a board, and one only, that it must be made by some one else besides the regular profession. Upon coming to Albany, however, I learned that the act was a little different; that it was modified by the Senate last year, and that this allowed of the appointment of "board or boards." Now, I don't know that there is a very great necessity for the existence of such a board. I don't suppose that it will have

Digitized by Google

the effect to advance the standard of education very much; and, on the other hand, I don't know that it can do any harm. But I cannot but believe that under and behind all this there are motives that are of great consequence to us. This, however, is a matter of mere suspicion; but I have a right here to express this suspicion. If we do not appoint this board, and thereby become recognized, as it were, in the Board of Regents, which is considered as the central authority of the educational institutions of the State, it will not be long before it will be claimed to those who are credulous, that the only board that has chosen to recognize the legislature and its acts is the board that should also be recognized as the one competent to take care of the public institutions in the State. So you see there is a little necessity of our being at least on a par with our professional brethren of the homœopathic school, and showing a moiety of their zeal in the advancement of knowledge. For that reason I recommend the appointment of the committee.

Dr. Eliot—I would like to make one remark in regard to the resolution recommending the appointment, by the Board of Regents, of a Board of Examiners for the purpose of determining the fitness of candidates for the degree of Doctor of Medicine, according to the act of 1872. I do not believe that it would amount to anything. I do not understand that any provision is made to reimburse the board for their time and trouble, which will be very great; and I do not believe that any eight prominent members of this Society could be found who would perform their duty faithfully. I speak with some experience in the College of Physicians and Surgeons. There the trustees appoint eight members to be present at the examination, extending over several evenings; and I am ashamed to say that the duty is not well performed. Perhaps two or three out of that number will be present at the examination of a part of the students; but oftentimes students are examined not in the presence of one of this committee. From my own experience in the matter, I should say that if the Regents should be ordered to appoint such a committee, unless some appropriation is made to reimburse them for their time and trouble, it will not amount to anything. And I don't believe in this Society taking action which does not promise some good result. I am, therefore, opposed to the adoption of the resolution calling for the Regents to appoint such a committee from the prominent members of this Society for that purpose.

Dr. Moore—In moving this resolution, I am disposed to agree with Dr. Eliot in the belief that there will be not a great many per-

Digitized by Google

sons to be examined; but I am also disposed to disagree with him that we may not get such a board in the initial stage, leaving open the question of compensation.

On looking over the law, I see there is provision that a certain sum of thirty-five dollars shall be paid by the candidate for a diploma. Now, we know very well that in our colleges there is this sum paid for the diploma.

Dr. ELIOT—Thirty dollars.

Dr. MOORE—Well, a sum—it differs in different colleges. And, although there cannot, under this Board, be organized at present any plan to compensate this Examining Board, I also believe that their labors will not be so onerous but what they may be performed, if the board does not have its residence very far from Albany. I have purposely avoided offering any resolution with reference to the appointment of this board, thinking that would come up as a matter of discussion.

But, Mr. President, I believe that it is a matter of very great consequence that we have this board in organization; and if it should turn out in the course of events that the candidates are numerous, then would come an opportunity to organize in such a way as to compensate them for their time.

There is no doubt in my mind that gentlemen can be found competent to make these examinations, who also will accept the post at present without the compensation. Leaving this thing to a natural development, I had intended to propose that it be referred to a certain number of gentlemen for the purpose of appointing the board for one year; at all events, so that it may be organized, and leave the question over for another meeting.

On motion of Dr. SQUIBB, the resolutions were taken up *seriatim* and adopted.

The report was then adopted.

On motion of Dr. MOORE, a committee of three was appointed to recommend the matter to the Board of Regents.

Dr. J. MARION SIMS read the history of "A case of Enucleation and removal of an Uterine Fibroid Tumor."

Dr. WM. C. WEY said: I desire to make a few remarks in regard to the hypodermic injection of ergot, as suggested by Hildebrandt in a series of seven or eight cases which have been extensively published throughout the medical press; and to say, in the first place, commencing with ergotine, that it is a factitious

Digitized by Google

article, having no proper place in the *materia medica*, but being only of commercial significance and value.

In a case of uterine fibroid of many years standing, which had attained such size as to press upon the rectum, producing mechanical occlusion of the bowel, and causing the patient to have excessive hemorrhages, I commenced the injection in the arm, of a solution of ergotine, which, after six trials, was abandoned because of its powerful local and irritant effect. I then used Squibb's fluid extract, in the abdominal wall, beginning with ten drops and increasing gradually every day up to twenty and twenty-five drops. In consequence of the pain attending this operation, I combined Magendie's solution of morphia with each dose. Conscious that there was an incompatibility in the use of these articles, I wrote to Dr. Squibb on the subject, and received from him the assurance that they were incompatible, and that they should not be used in combination, for the reason that all the proper effects of ergot were antidoted by the effects of the morphine. Dr. Squibb, at the same time, sent me a watery extract of ergot, which he said had properties for this purpose superior to the fluid extract, and which was also of greatly increased strength. This preparation I used, beginning with ten drops, through the skin of the abdomen, and gradually increased until fifteen, twenty, and thirty drops were daily injected. Local irritation followed this, as well as from the use of the fluid extract, and abscesses were produced. In the course of a short time, I opened eight quite large abscesses upon the abdomen, which discharged exceedingly offensive pus.

Subsequently abandoning the hypodermic injection, because of the local disturbance, I used the watery extract of ergot, beginning with sixty and gradually increasing to eighty drops each day, placed on a pledget of cotton in the vagina, and retained *in situ* by a large packing of the same material. Later, Dr. Squibb sent me suppositories of ergot, one form made with gelatine and another with suet; each suppository representing as much as eighty drops of the watery extract of ergot. These are still in use; the more solid extract for hypodermic injection when diluted, or for use by the stomach, rectum or vagina, has not yet been employed.

Now, let me speak of the effects of this plan of treatment. The tumor was diminished in the course of six weeks fully one-third in size; the indurated cervix had softened, no longer pressed on the rectum; the bowels moved regularly and spontaneously; hemorrhage ceased; menstruation lasted half as long as before, with less

Digitized by Google

than half the discharge of blood, and the general health of the patient has visibly improved. From four to six hours after the use of ergot by the skin or vagina, a tendency to sleep comes over the patient, which is quite irresistible.

The toxical effects of ergot have never positively been perceived, and I make these remarks more for the purpose of calling to the floor Dr. Sims, of New York, who has had very large experience with this class of cases, and Dr. Squibb, of Brooklyn, who has patiently pursued the study of the therapeutical effects of ergot, in many forms, with very gratifying success.

Dr. J. MARION SIMS said: When abroad, I often prescribed Boujean's sugar coated dragées of ergotine, but never saw the least effect, good or bad, produced by them.

When Langenbeck called the attention of the profession to the hypodermic use of ergotine, about two years ago, I tried Squibb's fluid extract of ergot hypodermically, but it produced such troublesome abscesses that I soon gave it up. When Hildebrandt published his article on the treatment of uterine fibroids, last summer, by the hypodermic use of ergotine, I opened a correspondence with Dr. Squibb on the importance of giving us some reliable preparation of ergot for this purpose. It seems that Dr. Wey did the same thing, and we thus carried on a triangular correspondence for some time, till Dr. Squibb at length made for us a simple aqueous extract. I have used it hypodermically, but, unfortunately, it frequently produces abscesses of a very bad character, and I have been forced, reluctantly, to abandon its use in this way. But I find that the aqueous extract can be made into pills, or into capsules of five grains each (five grains being equal to thirty of the crude ergot), and of these I ordered one or two every four or six hours, according to the urgency of the case. I have also had the extract made into suppositories of ten grains each. I have not as yet used these, but I am sure they will act efficiently. Nausea is one of the constitutional effects of the saturation of the system by ergot, and when this occurs the use of the remedy is to be suspended. But when used hypodermically, or taken into the stomach, it may produce nausea before the point of saturation is reached. Hence it may be well to have it in the form of suppository. Dr. Squibb has made some vaginal suppositories, but I do not think they are or can be of any great value, because when the effect of ergot is often most needed, *i. e.*, when there is a profuse bleeding, its flow would wash them out of the vagina before they could have time to produce the desired effect.

Digitized by Google

I am sure that the aqueous extract is less liable to produce nausea than the fluid extract, other things being equal.

I look upon Dr. Squibb's aqueous extract of secale cornutum as a most valuable addition to our Materia Medica; valuable to the accoucher, as well as to the surgeon; and we are under great obligations to him for it.

Dr. Squibb—It has been generally concluded by the German authorities and others, that ergot, unlike opium, aconite, etc., has no single active principle, but like senna and other substances, its value depends upon the whole substance; and that the preparation of ergot is best which most perfectly represents the whole drug.

The ergotines which have been commonly sold are different, and differ with the processes by which they are prepared, so that no one of them can be considered to fairly represent the active properties of the ergot. They are more nearly like our now fashionable so-called concentrations, and are liable to misrepresent their source in the same way.

As an evidence of the want of uniformity in the various ergotines sold, it is only necessary to mention the difference in dose; some being directed to be taken in doses as small as one sixteenth of a grain, whilst other substances of the same name are directed in two grain doses or more.

It should always be remembered that chemistry is as destructive when applied to some drugs, as it is advantageous when applied to others; and the difficulty is to draw the line where this splitting up by means of chemistry is advantageous in a therapeutical point of view.

Now, to prepare a representative of ergot, many points must be borne in mind. Ergot, in substance, is perishable, and its preparations, if not guarded in some manner, must partake of this tendency to deterioration. The officinal fluid extract of the Pharmacopœia of 1860, seems to represent the ergot as well as any preparation that has ever been made from it. I have known specimens of this fluid extract having been used after six or eight years' keeping, and it proved as effective as when freshly made—a test which would utterly fail, if applied to the ergot in substance.

I have always considered the profession greatly indebted to Professor William Proctor, Jr., of Philadelphia, for the formula and process by which this preparation was introduced, as it has now stood the trial of some fifteen years experience. This preparation,

Digitized by Google

however, is better adapted to the ordinary parturient uses of ergot, than it is to such uses as are now discussed, where a patient has to take it three or four times a day during a very long period. In such use the nauseous taste and the nauseating effect upon the stomach, sometimes produce anorexia, and patients are thus liable to run down during its administration. For this, among other reasons, Langenbeck, Hildebrandt and others have sought to use it by hypodermic injection, and have obtained its specific effects in this way. The officinal fluid extract has very frequently been used hypodermically, and occasionally with moderate success, but the alcohol and a little free acetic acid render it irritant and more liable to produce abscess than if these were absent. Two compounds, therefore, seemed desirable: one to get it into the stomach without the nauseous taste, and the other to get a preparation for hypodermic use which should be as little irritant as possible. These objects both seem to have been attained by the making of a solid extract which should be soluble in water alone; and after many trials, going, as is not uncommon, from the complex to the simple, instead of *vice versa*, I have succeeded in preparing a solid extract by the simple evaporation, at a very low temperature of the fluid extract. Heat is very destructive to the activity of ergot, hence this seems now to have been the principal thing in the way of most of the preparations of ergot. If a cold-made fluid extract be evaporated at a temperature not much exceeding the atmospheric range, a solid extract can be made which represents the drug in the proportion of one grain to six. A fine grain pill of such an extract, representing thirty grains of ergot, may be taken, of course, without nauseous taste, and with the least disturbance of the stomach. This same extract when dissolved in water, and the solution filtered, may be easily made into a solution, each minim of which may represent either one or two grains of ergot, and this solution is as well adapted to the hypodermic use of ergot, as any that has yet been devised. It should, however, be remembered that all solutions which well represent ergot are so loaded with organic matter, that they are liable occasionally to cause abscesses when introduced under the skin.

Some authorities regard any preparation which fairly represents ergot as not being applicable to hypodermic use at all, maintaining that it should always be given by the stomach. Others have used many of the preparations of ergot with only occasional abscesses, and therefore regard it as being applicable to hypodermic use,

Digitized by Google

whilst Dr. Wey has obtained its specific effects by application to the mucous surfaces of the vagina in the form of suppositories. This testimony all indicates that the remedy may be used in either way, and suggests that it is wisely used in all. That is, after the stomach fails to receive it kindly, it may be intermitted for a week or two without material loss of effect, and then resumed by hypodermic injection until abscesses follow this method of use. After another period of rest it may be wisely used by suppositories in the vagina. When the pledgets bearing the solution, or suppositories produce local irritation and perhaps leucorrhœa, and prevent the absorption of the remedy, another period of rest will enable the practitioner again to have recourse to the stomach—and so on for the continuous use.

Toxic effects of ergot, which have been feared from its prolonged use, do not seem to have been met with by those who have used the drug longest and in largest quantities. Still, the physician should always be on the watch when giving ergot continuously, and be prepared to intermit its use, either for the stomach's sake, or to avoid toxic effects whenever its disadvantages become apparent.

The Chairman of the Business Committee announced that Dr. J. N. Northrop, of Albany, would present a case of alleged spontaneous amputation.

Dr. J. N. Northrop—I should make an apology for trespassing upon the valuable time of this Society, were it not that the case which I am about to present, is one of very great interest to myself, and has become known to other gentlemen to a greater or less extent throughout the state. It has interested many, and I have frequently been urged to bring it to the attention of this Society.

[Dr. Northrop then read a statement of the case, and continued :]

In this connection, permit me to state, that the mother was a very delicate lady, and for sometime after this apparent recovery, there was a great amount of irritation upon the arm of the father. The lady was very much excited, fearing that the husband would necessarily lose his arm. Both the child and the father are here, and I will present the case to the Society. I have no suggestions directly or indirectly to make, but as a theoretical problem, it may not be wholly uninteresting.

[The father and child were then brought in, and their shoulders exposed.]

I have spoken of this as a case of spontaneous amputation, but I

Digitized by Google

perhaps had better have said, congenital amputation, because the child was born as it now appears.

Dr. JACOBI—I wish to make a remark on this case. Congenital malformations of this kind have two distinct natures. They are either simply arrests of development, or they are amputations. Amputations in utero have, as a rule, been attributed in former times to gradual pressure by the umbilical cord. It was thought that when the umbilical cord takes hold of a limb in a fœtus of two or three or four or five months' pregnancy, the result would be an amputation. I believe this theory will not hold good, inasmuch as the pressure necessary to amputate a limb gradually, would certainly destroy the life of the fœtus, by cutting off circulation. We know how easily circulation is cut off by a simple compression of the umbilical cord, even for a very short time.

A much more rational explanation of inter-uterine amputation, is that which I have found in specimens myself, that false ligaments are formed in consequence of inter-uterine inflammation, that the fingers or limbs are caught in such ligaments and cut off gradually, and with which the umbilical cord has nothing to do.

I remember a case of this kind a few years ago, presented to me in my clinic. There was a child with an incomplete amputation of a number of the fingers on the two hands, and a half amputation, a deep groove about two or two and a half inches below the knee, that could evidently not have been made by the umbilical cord, but must have been made by false ligaments. I have removed myself a fœtus from a uterus, after about thirteen or fourteen weeks' pregnancy, in which there were a large number of ligaments taking hold of the right thigh, the left fore-arm, etc.

If in this case here, I found any grooves anywhere about the body, in complete amputation, so to speak, I should perhaps feel inclined to call it a spontaneous amputation. But as there are no such grooves, I don't feel safe in so concluding; and for another reason. You will notice that there are little protuberances, four in number, on the inside of the upper extremity. These protuberances are found very frequently in such arrests of development; and they appear, too, to be the first indications of the fingers. I should certainly claim this as a case of arrest of developement, and nothing else.

The claim that this corresponds with the wound of the father, I think is not correct.

The following papers were read by title. "Penetrating Gunshot wound of Cranium, with Recovery," by Dr. A. VANDERVEER.

Digitized by Google

"Sequelæ of a case of Purpura Hemorrhagica," by Dr. H. S. Crandall.

Dr. C. Devol presented two pathological specimens, and, owing to the limited time, made no remarks.

Dr. A. N. Bell offered the following resolution, which was added to the report of the Committee on the President's Address, and the whole accepted and adopted:—

Resolved, That the standing Committee on Hygiene be added to, and hereafter be recognized among the standing committees, under § 3, p. 20, of the Organization and By-laws of the Society, and that said committee place itself in immediate correspondence with the county societies.

Resolved, That the Committee on Hygiene consist of seven members, one of whom shall be Dr. C. R. Agnew; the balance of the committee to be appointed by the Chair.

The President announced the committee, as follows:—Drs. A. N. Bell, S. O. Vanderpoel, H. D. Didama, H. W. Dean, John Ordronaux, Stephen Smith, and C. R. Agnew.

The Nominating Committee then reported through Dr. J. Foster Jenkins, their Secretary, as follows:—The Committee on Nominations have the honor to report that they have unanimously agreed to recommend to the Society the following nominations to office for the ensuing year:—

President—E. M. Moore, M.D., Rochester.
Vice-President—Francis Burdick, M.D., Johnstown, Fulton Co.
Secretary—William H. Bailey, M.D., Albany.
Treasurer—Charles H. Porter, M.D., Albany.

Censors.

Southern District....	E. R. Squibb, M.D., Brooklyn.
	Edward H. Parker, M.D., Poughkeepsie.
	Ellsworth Eliot, M.D., New York.
Eastern District.....	George H. Hubbard, M.D., Lansingburgh.
	James L. Babcock, M.D., Albany.
	John P. Sharer, M.D., Little Falls.
Middle District.....	M. M. Bagg, M.D., Utica.
	Horace Lathrop, M.D., Cooperstown.
	C. G. Bacon, M.D., Fulton.
Western District....	Caleb Green, M.D., Homer.
	C. C. Wyckoff, M.D., Buffalo.
	D. Colvin, M.D., Clyde.

Digitized by Google

COMMITTEE ON CORRESPONDENCE.

First District.....	George F. Shrady, M.D., New York.
Second District.....	Abraham Crispell, M.D., Rondout.
Third District.....	Henry B. Whiton, M.D., Troy.
Fourth District.....	T. B. Reynolds, M.D., Saratoga.
Fifth District.....	Samuel G. Walcott, M.D., Utica.
Sixth District.....	J. G. Orton, M.D., Binghamton, Chairman.
Seventh District.....	H. B. Wilbur, M.D., Syracuse.
Eighth District.....	Thomas F. Rochester, M.D., Buffalo.

PERMANENT MEMBERS.

First District.....	Robert Newman, M.D.. New York.
	J. Marion Sims, M.D., New York.
Second District.....	T. Blanch Smith, M.D., Nyack. Rockland Co.
	William H. Helm, M.D., Sing Sing.
Third District.....	Edward R. Hun, M.D., Albany.
	R. H. Ward, M.D., Troy.
Fourth District.....	John Parr, M.D., Buel, Montgomery Co.
	D. G. Dodge, M.D., Rouse's Point.
Fifth District.....	H. G. P. Spencer, M.D., Watertown.
	William L. Baldwin, M.D., Utica.
Sixth District.....	J. S. Dolson. M.D., Bath.
	William Fitch, M.D., Dryden.
Seventh District.....	George W. Earll, M.D., Skaneateles.
	E. W. Simmons, M.D., Canandaigua.
Eighth District.....	Charles N. Palmer, M.D., Lockport.
	J. R. Cotes, M.D., Batavia.

ELIGIBLE FOR PERMANENT MEMBERSHIP.

First District.....	Ernst Krackowizer, M.D., New York.
	Abraham Jacobi, M.D., New York.
	H. Knapp, M.D., New York.
	Salvatore Caro, M.D., New York.
	B. S. Thompson, M.D., New York.
Second District.....	Augustus Huhne, M.D., Rondout.
	Solomon Van Etten, M.D., Port Jervis.
Third District.....	Albert Vanderveer, M.D., Albany.
	Henry March, M.D., Albany.
	Charles A. Robertson, M.D., Albany.
	A. M. Vedder, M.D., Schenectady.

Digitized by Google

Fourth District.....	Norman L. Snow, M.D., Canajoharie.
	Eugene Beach, M.D., Gloversville.
	A. C. Butler, M.D., Plattsburgh.
	E. D. Ferguson, M.D., Essex.
Fifth District.....	Frank D. Beebe, M.D., Hamilton.
	Lucius Stevens, M.D., Constantia.
	F. B. A. Lewis, M.D., Watertown.
	Franklin B. Hough, M.D., Lowville.
	William H. Nelson, M.D., Taberg.
	Judson B. Andrews, M.D., Utica.
Sixth District.....	George Douglas, M.D., Oxford.
	William B. Alley, M.D., Nunda.
	A. H. Cruttenden, M.D., Bath.
	John K. Stanchfield, M.D., Elmira.
	George W. Metcalfe, M.D., Owego.
Seventh District.....	J. W. Palmer, M.D., Victor.
	William Oliver, M.D., Penn Yan.
	T. S. Brinkerhoff, M.D., Auburn.
Eighth District.....	William B. Sprague, M.D., Pavilion.
	B. L. Hovey, M.D., Rochester.
	W. S. Ely, M.D., Rochester.
	William Gould, M.D., Buffalo.

HONORARY MEMBERS.

Prof. Robert Stokes, Dublin; Prof. Rawdon McNamara, Dublin; Joseph Meredith Jones, M.D., Washington, D. C.; Dr. H. C. Lombard, Geneva, Switzerland.

ELIGIBLE TO HONORARY MEMBERSHIP.

Mr. Ernest Hart, London; Dr. Benjamin W. Richardson, London; Mr. Spencer Wells, London; S. C. Busey, M.D., Washington, D. C.; E. H. Gregory, M.D., St. Louis, Mo.; Washington D. Atlee, M.D., Philadelphia; Dr. W. Baëk, Christiana; Dr. J. Matthews Duncan, Edinburgh.

FOR THE HONORARY DEGREE OF DOCTOR OF MEDICINE.

Dr. Nathan R. Tefft, Onondaga Hill.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

Drs. Frederick Hyde, Cortlandville; H. W. Dean, Rochester; C. B. Coventry, Utica; C. R. Agnew, New York; E. M. Moore, Rochester; Thomas F. Rochester, Buffalo; Ernst Krackowizer,

Digitized by Google

New York; George J. Fisher, Sing Sing; Abraham Jacobi, New York; Philander Stewart, Peekskill; H. N. Eastman, Geneva; B. F. Sherman, Ogdensburgh; Thomas Addis Emmet, New York; Robert Newman, New York; S. Oakley Vanderpoel, Tompkinsville; John P. Gray, Utica; D. P. Bissell, Utica; H. D. Didama, Syracuse; J. V. P. Quackenbush, Albany; E. R. Squibb, Brooklyn; Francis Burdick, Johnstown; William H. Bailey, Albany; C. C. Wyckoff, Buffalo; Alexander Hutchins, Brooklyn; Thomas D. Strong, Westfield; James W. Wilkes, Auburn; William M. Chamberlain, New York; James R. Leaming, New York; B. L. Hovey, Rochester.

DELEGATES TO THE PENNSYLVANIA STATE MEDICAL SOCIETY.

Drs. James B. Murdoch, Pittsburg, Penn.; Salvatore Caro, New York; J. B. Graves, Corning; S. H. French, Lisle; Charles E. Rider, Rochester.

DELEGATES TO THE OHIO STATE MEDICAL SOCIETY.

Drs. C. C. F. Gay, Buffalo; M. W. Townsend, Bergen.

DELEGATES TO THE RHODE ISLAND STATE MEDICAL SOCIETY.

Drs. Bradford S. Thompson, New York; Samuel Hart, Brooklyn.

DELEGATES TO THE NEW JERSEY STATE MEDICAL SOCIETY.

Drs. Edward R. Hun, Albany; M. H. Burton, Troy; R. L. Allen, Saratoga; Morgan Snyder, Fort Plain.

DELEGATES TO THE NEW HAMPSHIRE STATE MEDICAL SOCIETY.

Drs. R. H. Ward, Troy; George H. Hubbard, Lansingburgh; M. R. Holbrook, Poughkeepsie.

DELEGATES TO THE VERMONT STATE MEDICAL SOCIETY.

Drs. W. W. Porter, Geddes; J. V. Cobb, Rome; Thompson Burton, Fultonville; A. C. Butler, Plattsburgh; N. C. Husted, New York.

DELEGATE TO THE KENTUCKY STATE MEDICAL SOCIETY.

Dr. Rexford Davison, Lockport.

DELEGATE TO KANSAS STATE MEDICAL SOCIETY.

Dr. Hiram McNutt, Warrensburgh.

Digitized by Google

DELEGATES TO THE MAINE STATE MEDICAL ASSOCIATION.

Drs. E. R. Peaslee, New York; William Govan, Stony Point; D. B. St. John Roosa, New York; John Swinburne, Albany.

DELEGATES TO THE ILLINOIS STATE MEDICAL SOCIETY.

Drs. James H. Armsby, Albany; G. S. Winston, New York.

DELEGATES TO THE MASSACHUSETTS STATE MEDICAL SOCIETY.

Drs. Elisha Harris, New York; John C. Peters, New York; J. V. P. Quackenbush, Albany; J. V. Kendall, Baldwinsville; Gurdon Buck, New York; George F. Shrady, New York; S. T. Clark, Lockport.

DELEGATES TO THE CONNECTICUT STATE MEDICAL SOCIETY.

Drs. Joseph C. Hutchison, Brooklyn; C. N. Palmer, Lockport; H. C. Hendrick, McGrawville; A. E. M. Purdy, New York; Ferris Jacobs, Delhi; Samuel G. Wolcott, Utica.

DELEGATE TO THE MICHIGAN STATE MEDICAL SOCIETY.

Dr. J. V. Kendall, Baldwinsville.

DELEGATE TO THE CANADIAN MEDICAL SOCIETY.

Dr. A. S. Wolff, Plattsburgh.

COMMITTEE ON STATISTICS.

First District..... Dr. H. P. Farnham, New York.
Second District..... Dr. George J. Fisher, Sing Sing.
Third District..... Dr. Charles H. Porter, Albany.
Fourth District..... Dr. Alexander M. Vedder, Schenectady.
Fifth District..... Dr. E. Odell, Unadilla.
Sixth District..... Dr. John G. Orton, Binghamton, Chairman.
Seventh District..... Dr. Nelson Nevison, Burdett.
Eighth District..... Dr. L. B. Cotes, Batavia.

COMMITTEE ON PRIZE ESSAYS.

Drs. Thomas F. Rochester, Buffalo; Henry W. Dean, Rochester; Julius F. Miner, Buffalo.

COMMITTEE ON PUBLICATION.

Drs. J. V. P. Quackenbush, Albany; William H. Bailey, Albany; H. B. Whiton, Troy.

Digitized by Google

COMMITTEE ON BY-LAWS.

Drs. Oliver White, New York; Thomas Hun, Albany; William H. Bailey, Albany.

CENSOR FOR THE SYRACUSE UNIVERSITY—MEDICAL DEPARTMENT.

Dr. Samuel G. Wolcott, Utica.

COMMITTEE ON PHARMACOLOGY.

Drs. E. R. Squibb, Brooklyn; Caleb Green, Homer; William Manlius Smith, Manlius; B. A. Segur, Brooklyn.

Respectfully submitted.

WILLIAM C. WEY, *Chairman.*

J. FOSTER JENKINS, *Secretary.*

The Nominating Committee also recommended the amendment of By-law 5, so that it shall read as follows:

§ 5. The Society may annually elect from those who have served as delegates, and have been nominated and declared eligible at a previous meeting, two permanent members from each of the senatorial districts established in 1836, but no delegate shall be declared eligible until the close of the third year of his term of service, and until he has been present at three annual meetings of the Society.

On the motion of Dr. Eliot, the Vice-President was empowered to cast the ballot for the Society, and Drs. Moore, Burdick, Bailey and Porter being respectively declared elected, the report of the committee was accepted as a whole, and the officers named by them declared unanimously elected.

Dr. JENKINS offered a resolution, as a part of the report of the committee, that no one should be eligible for election to permanent membership until he had been a delegate for three years.

Dr. SQUIBB offered an amendment, which required delegates to be present and serve at the meetings of the Society for three years (not necessarily consecutive).

After discussion, the resolution was carried as amended, and the report of the committee adopted.

Dr. F. B. A. LEWIS offered the following:

Resolved, That this Society extend their sincere thanks to the officers and members of the Medical Society of the County of Albany, for their munificent entertainment and warm reception of last evening. Carried.

Digitized by Google

The President, addressing the Society, then said: I cannot leave the chair in which I have been placed by your favor, without thanking you for the great indulgence and charity which you have manifested towards me, as your chairman, nor without wishing you, personally and collectively, all the happiness that you desire in your individual relations, and in your professional associations. I thank you for your great kindness. (Applause.)

On motion of Dr. Ellsworth Eliot, the Society adjourned, *sine die.*

WM. H. BAILEY,
Secretary.

Digitized by Google

ARTICLE II.

Some of the Relations of the Medical Profession to Education. Anniversary Address delivered before the Medical Society of the State of New York, at its Sixty-seventh Annual Meeting, by C. R. AGNEW, M. D., President of the Society.

Gentlemen and Friends of the Medical Society of the State of New York:

I would be entirely unworthy of your esteem, if I did not feel at this moment a sense of embarrassment. You naturally expect one whom you have raised, by your suffrages, to this position, to fill the hour with the discussion of some theme relating to the high interests of our calling. Its position among the three learned professions, and the almost countless points of contact between it and the many social, moral, scientific and religious questions of the day, make the choice of a subject for an occasion like this, peculiarly difficult. Nothing seems to me to be more impressive among the good things of our day than the active discussion that is being carried on upon the subject of general and special or technical education. Many in our profession are led to think of education in its more restricted application to our science and art, but not a few, let us hope, as to its broader and deeper relations to true culture. We cannot be unconscious of a struggle that is being waged—a struggle between conservatives on the side of a classical and literary education, and a class of reformers ardently in favor of a more purely scientific and utilitarian scheme. Nor can we fail to see that a middle party is forming, both in this country and in Great Britain, which is engaged essentially in the work of reconciling the contestants, so that we may have the classics preserved in their proper places in the curricula and the sciences better taught and better learned, because taught and learned by those who shall have had their minds regularly opened and invigorated by sufficient and skilfully arranged classical and scientific courses. It is not my purpose now to step into the great arena in which this contest is going on, or to presume to wield the weapons of either side. I shall not even attempt to define culture, knowing that to do so would tax your patience, and show my comparative ignorance. You, no doubt, have followed Herbert Spencer, John Stuart Mill, Noah Porter, Elliot, White, Prof. Shairp, Mathew Arnold and Dr. McCosh, and the many other

Digitized by Google

essayists and scholars who have presented the arguments that go to elucidate this broad and most intricate subject, and already thought more or less deeply as to the influence of all this discussion upon the quality and methods of our strictly professional schools. But while I shall not venture now to put on the armor of a champion, I cannot refrain from saying that all my sympathies are with the men who, like Prof. Shairp, of St. Andrews, advocate that school of culture which gives to religion its true place as the corner stone of education, and who, with Dr. McCosh and Noah Porter, build minds on that corner stone, using most freely the enduring material of the old classics. Minds thus built, and built slowly, will appropriate and energize all the scientific knowledge and wise utilitarianism that may be necessary for their own high purposes, the good of their contemporaries and other learners. We cannot as a profession keep out of this contest if we would. We must continue to take part in it, and the value of what we do must depend upon what we are in our real selves, and upon the character of our comrades and allies. The future of our medical schools depends upon our action. And through those schools must come, in great degree, the character of our professional descendants. It makes the greatest difference whether we take sides with the mere utilitarians, and cast the weight of our influence, and such learning as we may possess, in favor of an almost exclusive study of the sciences as preliminary to the curricula of our professional schools. We hear on all sides that we need a higher tone in our medical schools, and that doctors are going up and down in society whose medical sheep-skins do not cover or indicate their true character. No one will deny that the more disciplined minds we have in our profession the better. It is true, as John Stuart Mill says, "that men are men before they are lawyers, or physicians, or merchants, or manufacturers; and if you make them capable and sensible men, they will make themselves capable and sensible lawyers or physicians." And it carries out the idea which he thus expresses when we affirm that we may be able, by exercising our influence rightly, to help to bring more men from our academies and colleges into our profession who will bring with them "the light of general culture to illuminate the technicalities of their special pursuits."

To practice medicine safely for our patients, we must be sound, accurate thinkers before we become skilled artisans. We must have our minds well opened and invigorated by careful intellectual training. We must have the great radical facts of the sciences as much at com-

Digitized by Google

mand as the instruments in our surgical cabinets. We must be able to apply these facts in every emergency. We must know where they are and what they are, so that we can apply them in the dark. We must be able to use them, as we often have to use our mechanical contrivances, guided by our knowledge of anatomy, and be able to produce accurate results in cavities or passages lying beyond the range of mere sense of sight. And we must be so well trained that we can bring logic to bear when the testimony of our senses is involved, obscure or unproductive. We shall have little difficulty in acquiring the details of our art to any needed degree if only we have a well built substructure in our education. And we must remember with Archbishop Whately, quoted by Mr. Mill, not to mistake familiarity for accurate knowledge. The lives and happiness of our patients, to say nothing of our peace of conscience, depend on this distinction. I have somewhere heard it said that a thorough knowledge of the science and art of medicine does not necessarily make a good doctor any more than mere intellectual acquirements make a good man. Deep corruption of religion and morals may exist where there is great progress in science and art, and the resultant doctor may be a blemish on the list of his profession, and prey upon the credulity of his patrons.

As our fitness to fill our high calling must depend upon our intellectual, moral and technical qualities, and as the result is directly connected with our personal and combined influence upon general and medical education, would it not be profitable, in the best sense, for us to spend the few remaining moments of the time which measures your patience in following the lead of the thoughts which we have tried to express?

Our schools of medicine can not rise much, if any, above the intellectual level of the profession itself.

Now, this being so, are we prepared or willing to give our medical schools the substantial aid they need to enable them to keep up with the educational movements of the day? When I think of the difficulties under which they have labored, and still do labor; how they have toiled on with scarcely a penny of endowment; how the men who have manned the faculties have struggled with the hard duties of daily practice, and yet found time to spend in the lecture room and clinic, time which might have found better pecuniary return, if that had been their grand objective, in routine work elsewhere. How bravely these men have cast not only their hard earned money into the property of the schools, but every talent that they

Digitized by Google

possessed. And when I think of the average character of the medical graduates of these schools, in the light of what we may safely fix as the standard of social and intellectual life in which they live and move, I am not ashamed of what has been in the past. But we must press on to better results. We need in our profession in this country the influence of a learned class. We cannot, if we would, deny that such a class exists, but we need an enlargement of it. We need a class of men engaged in original researches; of men who can work more, and write more with less reference to the effect upon their practice; an increase of specialists of the highest order—not of medical men bearing the unsolicited and vulgar titles of oculist and aurist, and the like, but men of intellectual growth, who shall have laid broad foundations and built with studious observation in many quarries of medical and other knowledge, and at last found a special sphere fixed within the pale of the profession by the ready consent of their peers. What Lord Macaulay says in his report upon special education for the East India service would apply here with equal force if we would change the ages of the subjects so as to make them agree with those of the younger members of our profession. He tells us that the men who had done best in the specialties of that most difficult service were those who had been most faithfully engaged for a large portion of their school days in studies which had no immediate connection with the special business proposed, but which had the effect of opening and invigorating the mind. Sir William Gull tells us "that the interchangeable relations of things are such as to make necessary the most discursive operations of the mind, if it would successfully inquire into that which is most special. I desire," says he, "that that which is our proper work should have our entire energies strengthened and directed by every collateral aid." We need more men who shall have learned the lesson taught by Frederic Perthes, when he said to a young friend: "You know only too well what you can do; but till you have learned what you can not do, you will neither accomplish anything of moment nor know inward peace." How can we accomplish the desirable results alluded to? To bring them about we must be moved by noble impulses, corrected and guided by good hearts and sound scholarship.

When Harvey published his theory of the circulation of the blood his practice fell off, and the medical profession stigmatized him as a fool. "The few good things I have been able to do," said John Hunter, "have been accomplished with the greatest opposition."

Digitized by Google

Sir Charles Bell, while employed in his important investigations as to the nervous system, which issued in one of the greatest physiological discoveries, wrote to a friend: "If I were not so poor, and had not so many vexations to encounter how happy would I be." But he himself observed that his practice quickly fell off after the publication of each successive stage of his discovery. We cannot expect the patronage of government to produce or sustain a class of self-denying workers among us. Government is incapable of determining what a doctor is, and will give us no reliable aid. But if we see our duty in the matter we can find the means. We must attach to our colleges young men who have displayed a love of original research, an aptitude for teaching, or other qualities enabling them to advance the cause of medical education. Many an alumnus has gone forth from our medical schools to spoil himself in "pot boiling" who might have anticipated the discoveries of foreign laborers had we possessed some of the means which German and even English universities possess to sustain laborers in those departments of labor which bring, in the common market, no bread and butter.

It will be urged, and with great truth, that our profession does not possess large pecuniary ability, and that money is needed to carry out such plans. While I believe that large sums of money might be raised from the profession itself, in small sums, if a plan could be agreed upon, it is not essential to suppose that all or even a large portion of the money needed is to be raised within its ranks. If we will only step into the place that is waiting for us in the discussion which is going on regarding culture, we will come in contact with men who have money to give to advance education, and without any sacrifice of true dignity get our share for the simple asking. Surely, the elevation of a profession like ours, by increasing the culture of its members, is a scheme worthy of the patronage of those who have been blessed with money. But how much better would it be on the principle that it is more blessed to give than to receive, if we would raise the money among ourselves. I firmly believe that if we would select a small body of trustees from our permanent members and give it legal existence, and then announce a well matured plan, abundance of money would come from the profession itself. Five or ten cents a day from every member of our profession in the State would soon give all the money that would be needed to establish a fund, the interest of which might go to help any medical college within the limits of the State, not to

Digitized by Google

cheapen its curriculum but to enlarge, enrich and enforce it. And inasmuch as we must be all agreed that our work should be thorough, it would be well to use the proceeds of such a fund :

First—To encourage those to enter our Medical Schools who shall have passed honorably through a reputable Academic College.

Second—To broaden and make more thorough within the schools the work in the institutes of medicine, anatomy, physiology and chemistry.

Third—To create post graduate courses or fellowships for those who have proved themselves able and willing to search for the truth in any subject connected with the science and art of medicine, and to ensure to such laborers an adequate living so long as competent official observers recognize their industry, not to say their success. I use the latter word guardedly, as the history of the progress of science shows most plainly that a contemporary generation is not always able to judge of the success of inquirers, many of whom live in advance of their times, if they are not persecuted in them. I know it is thought by some to be a fine thing to speak harshly of our schools ; but we must remember when such a spirit tempts us to criticise, not to be hasty or cynical, and that our schools are just what we make them, however utopian our inexpensive theories may be. Until as a profession we chasten the feeling of petty jealousy or drive it forth ; until each alumnus moves earnestly and intelligently so far as he has opportunity and ability, either in aiding his respective school or in furthering some such plan as we have indicated, our schools will not reach the development which their founders, professors or intelligent critics desire for them. If our medical schools begin to yield to the cheap advice of that formless something which the vulgar worship and call the public, they will go down in disgrace. Dr. Wayland has said, most sententiously, "the colleges, so far as I know, which have obeyed the suggestions of the public, have failed to find themselves sustained by the public. The means which it was supposed would increase the number of students in fact diminished it, and thus things gradually, after every variety of trial, have generally tended to their original constitution. So much easier is it to discover faults than to amend them, to point out evils than to remove them. And thus have we been taught that the public does not always know what it wants, and that it is not always wise to take it at its word." If, then, our schools are not up to the ideal that we would fain have them realize, we must struggle more wisely, humbly, and, therefore, successfully towards

Digitized by Google

a higher ideal for ourselves. In this spirit we will go upward, and, as we go, our schools will be found to occupy a higher plane. Some say give us the German schools. The German schools are a part of their university system, and that is built into and upon the Realschule and Gymnasien. We cannot have one without the other, but we can engraft upon our schools such features of the foreign ones as a carefully prepared knowledge of the subject in all its bearings would prove to be wise or expedient. If they were set up among us entire and at once, they would, we fear, be like certain exotics that adventurous experimental gardeners try to adapt to our climate, so out of keeping with their surroundings, and so affected by change of soil as to be neither useful nor ornamental. There must be a harmony between schools, and the wants of the people, if the people among whom they exist have any intellectual life worth preserving and developing. Let us have the right spirit in the profession here, and no fear but that we will import every needed addition to our schools and colleges; but let us remember that it is not everything that is foreign that is better than that which we already possess, any more than that everything that glitters is gold. Above all things, we must remember that if a young man enters a medical school ignorant, he will go out ignorant. You cannot make a clean thing out of an unclean.

Let us now turn for a few moments to the related subject of the duty and privilege of medical men in what may be called the hygiene of the education of children and youth. Scattered as the members of our profession are over the entire State, and looked up to wherever there is a cluster of people intent upon educating their children, we have a rich opportunity of inculcating principles derived from our knowledge of general physiology and the constitution of the material brain as the organ of the mind. Some time ago a girl twelve years of age, the child of healthy parents, was brought to me broken down in her eyes. Inquiring into the minute history of her case I found that she had for a long time had an average of five daily tasks to prepare and recite. That these tasks filled the early part of the day, from nine to two, and absorbed most of the afternoon and evening. That she had shown some appearance of being fagged until finally her teacher, desiring no doubt to apply an additional stimulant, had added to the ordinary lessons the four following questions to be answered on the next Monday, this being Friday:

1. The names of the principal rivers in the United States.

Digitized by Google

2. The names of the principal colleges in the United States.
3. The Coral Islands of the Pacific.
4. The recent earthquakes in South America.

I verily believe that we have no higher duty as a profession in this, the so-called Empire State, than to devote ourselves thoughtfully and fearlessly to the great subject of the education of children up to the age of sixteen. To do this effectively we must become careful students of all the elements involved in the subject, we must have clear views of the physiology of the nervous system, and be posted in all matters relating to public and domestic hygiene. We must study the requirements of the age in which we live. We must show ourselves so possessed with high purposes, so public spirited, so matured in judgment, so unaffected by the effervescence of noisy reformers, so devoted in fine to the interests of true culture that our advice will be asked for and adopted in every institution of learning from the district schools to the University. And we must not wait to be asked to take part in this most important work, but press forward with organized effort. Even in the city of New York, with its boasted public school system, there is room for reform from the Primary Schools up to the New York College. I quote from a recent report: "Seventeen school buildings have been inspected, against all of which reports are made of bad sanitary condition. Six of them have class rooms so damp and dark that they are declared to be unfit for school purposes, and in one case it is recommended that the entire building be vacated."

The visiting physician to the New York Board of Education, in his first report to the Board, says: "The conditions of health are so commonly overlooked that it will not be out of place here to lay down a few broad principles which have an application to the matter in hand." Let us not content ourselves with hoping merely that the courteous action of the Board which ordered this report in full upon the minutes and on file, would be followed up by intelligent action, but let us see to it that the hands of our professional brother, and all others who, like him, are at work, be strengthened, and that we are behind them to sustain with the full weight of our united intelligent influence, and to make action certain. One of the principals of one of the largest of those public schools has told me that they get on with the primary children very well in the morning, but that it is almost impossible to keep them awake in the afternoon from the effect of mental strain and bad air. And what is true of the primaries, as regards neglect of some of the

Digitized by Google

plainest as well as many of the more obscure but still demonstrable laws of hygiene, is true of the grammar schools and colleges. Cramming is practiced to a lamentable degree, and an officer high in authority, and in a position to know, has recently told me that he always expected, under the system in vogue, to break down one-seventh of his school by the monotony and strain of the winter's work. In our colleges, where the examinations are at long intervals, and the standard of marks high, it is no uncommon thing for some of the students who have been loyal to duty throughout the preceding term to go for a week or ten days before the examination without any more sleep than they can catch, when thoroughly exhausted, by throwing themselves down upon their beds. Thus cramming hour after hour, day and night, subjecting the brain to most damaging strain, robbing it of its force, impairing its nutrition, deranging its organic functions, and sowing broadcast through the nervous system the germs of disease, which will grow disastrously whenever the friction and wear and tear of the work of life warms them into being.

No one who is called upon to treat diseases of the eye has failed to be impressed with the increasing prevalence of asthenopic, refractive and neurotic difficulties among scholars of both sexes. Or to be impressed by the fact that the various maladies just alluded to are growing rapidly more prevalent in cities, schools, colleges and other centers of civilization, or that they follow closely the extension of the more rigorous educational and industrial systems into the provincial towns and rural districts. What we believe our experience is able to prove has already been proven abroad by careful observers, and governments have been forced to interfere in the interests of sanitary reform. Any one desiring to be posted in this matter may get most useful information in the report of Dr. Hermann Cohn, or that of Dr. Erismann.

They have made most careful studies of the eyes of thousands of children and youths in the lower, middle and upper schools and University of Breslau and elsewhere, comparing these with the eyes of persons living in country districts and engaged in industrial pursuits requiring the exercise of protracted and scrutinizing vision. They have looked into the habits and physical condition of the subjects of these examinations, and given us the results of their labors. In these examinations they found that nearsightedness and other serious maladies were increasingly frequent as you ascended from the

Digitized by Google

lower to the higher schools and the University. That students stooping over badly made desks. in badly lighted rooms, and in a vitiated atmosphere, were rapidly impairing their eyes and developing diseases which, in a multitude of cases, would certainly end in inability to carry out the grand objects of life, or if not arrested by complete change of employment, lead to blindness of one or both eyes. I only touch on this matter, but sufficiently, I trust, to open up a most interesting and valuable field of professional and philanthropic labor among ourselves.

From these hints we may begin to learn what abuse of the eyes in the comparatively easy going communities of Germany is doing, and draw conclusions as to what is like to happen with us. We live and move at a fearful rate.

Much of our force as a people is, no doubt, energized by the best of impulses, and drawn out by noble pursuits; but are we not largely possessed by the noisy demons of fuss and hurry, and do we not often mistake quantity for quality? Is there not some danger of adding to the effects of our climate and those which come from the very necessities of the newness of everything, and the resources to be everywhere developed, the great evil of thinking that we can do anything that we choose to turn a hand to, and that the average American has only to will, and he can accomplish anything? Is there not a danger that this very feeling is likely to make us force children too rapidly through schools, as through a kind of stuffing process, without due regard to thoroughness in method and the laws of growth and development? Are we not too much given in our schools to the attempted acquisition of accomplishments, and do we not everywhere goad on teachers to get our children under glass, as the gardeners say, and force them up to some standard of attainment that has been fixed by fickle fashion, and cannot be defended by any consideration of thoroughness, real beauty, or usefulness? Is there not a great deal of so-called education that does not go down into the moral or intellectual being, to say nothing of the spiritual? Is there not a great deal of scholastic veneering done under pressure, and, as it were, with hot glue, looking very well, but not good for wear or to stand out in the storms of life? And have we not all suffered enough in our own experience to make us long for opportunities to inculcate sound principles in these supreme matters? I would not have attempted to call your attention to these matters if I did not believe that they had a direct relation to

Digitized by Google

the status of our own profession. The more real good we do as individuals and a profession, in inculcating the principles that our experience affords, upon the teachers and the taught down to the very bottom form in the school-house and the nursery, the better it will be for our medical schools. They must be fed from the primary benches, and every lover of his calling will hold this constantly in view.

Dr. Brigham, quoting from Spurzheim, says: "Many parents anxiously strive to cultivate the intellect of their children and neglect to fortify their constitution. They believe that children cannot too soon learn to read and write. Their children, therefore, are obliged to remain many hours in school, breathing an impure air, while they ought to be developing the organs of the body by exercise. The more delicate the children are, and the more their affections and minds are precocious, the more important it is that the above error should be avoided. We often see also that those much admired in their infancy for their genius waste all their energies in youth, and at a mature age possess but ordinary minds."

And Dr. Hufeland, in his work on the art of prolonging life, observes: "Intellectual effort in the first years of life is very injurious. All labor of the mind which is required of children before their seventh year is in opposition to the laws of nature, and will prove injurious to the organization and prevent its proper development." I might quote indefinitely. But you already know these things. When we return to our respective homes, let us look into the schools and see how far a real knowledge of these principles influences boards of school trustees and teachers.

Let us then go down from this meeting in which we have refreshed ourselves by many interesting discussions, inspired by the determination to be more public-spirited, more loyal to high duty, more studious of the high questions of our calling, and more intelligently active than ever before in carrying the knowledge which we possess, or can acquire, to any subject which relates to the health of the communities in which we live, and let our views as to what health is, include a sound mind in a sound body, and let no skeptical materialism freeze us into forgetting that the men, women and children with whom we deal, and for whose highest welfare we are bound as a profession to work, are endowed not only with bodies and minds, but with immortal souls.

Let us remember in our combats with error the lesson taught by the fable of Valentine and Orson. How, when Valentine went out

Digitized by Google

to meet his degraded brother he did not carry weapons with which to destroy his life, but a burnished shield, and when Orson looked upon this uplifted mirror, "he was conquered by the reflection of his own deformity."

Digitized by Google

ARTICLE III.

Report on the U. S. Pharmacopœia. Read before the Medical Society of the State of New York, February 5, 1873. By EDWARD R. SQUIBB, M.D., of Brooklyn, N. Y.

To the Medical Society of the State of New York:

As chairman of the delegation sent to represent this Society in the Decennial Convention for the revision and publication of the U. S. Pharmacopœia—which convention met in Washington, in May, 1870—it now becomes the duty of the undersigned to report that the revision and publication of the U. S. Pharmacopœia have been completed, and to present a copy of this new fifth revision to the Society for preservation in its library.

In presenting the completed work, it may be useful to the Society, and is necessary to the writer, as one of the Society's representatives in the matter, to direct attention to some prominent points in the new Pharmacopœia, and to ask the earnest, thoughtful attention of the profession to this important subject. If the medical profession does not advance with the rapid progress of other departments of human knowledge and skill, its useful results will be proportionately small, its influence for good will be more and more weakened, and its ranks be more and more demoralized by error and schism. In its struggle for life, inherent strength alone can secure the "survival of the fittest." In order to advance with the rapid progress of other knowledge, it must adopt all the means necessary to that end, and therefore must attain a much higher degree of accuracy in observation and research, as well in the objective as in the subjective branches of medical science.

Medical science, as a department of physical science, is thoroughly objective in its character, and very simple and direct in its design, and is of established value and importance; and, if physicians would but take the example of other physicists in the precision and accuracy of their investigations, their ranks would become more orderly and compact as their results became more definite and certain. The element of primary importance to accuracy in observation and research is quality, or greatest attainable perfection in the instruments of investigation. The telescope and spectroscope, the galvanic battery, and the lever and axle to other physicists, fairly represent the materia medica to the physician. And, if the

Digitized by Google

materia medica be not improved in accuracy, precision, and uniformity, as the telescope, spectroscope, and microscope are, the observations made through its agency must continue to be indefinite and uncertain from this cause, and can never rise to the dignity or utility of accurate research.

The new Pharmacopœia having been received within the two weeks just past (February 1, 1873), your reporter can offer but an imperfect and hasty review of it. Nothing can be said as the result of trial and experience of its new processes, and all that is here written is offered as the mere individual judgment of the writer, made up somewhat hastily, but not carelessly. Where this judgment is at variance with that of the Committee of Final Revision and Publication—a numerous committee whose high character is well known—the writer is fully sensible of the weight against him, and of the well-earned advantage such a committee must always have in the minds of careful readers.

In making a report at this time, rather than at the annual meeting a year hence, only a few prominent points can be touched upon in detail; but it is hoped that even this may not be without use in awakening a new interest in the materia medica, and in attracting special attention to the new Pharmacopœia.

The mechanical execution of the book leaves nothing to be desired. The paper, type, printing, and binding, are highly creditable, both to the committee and to the publishers, and partly justify the increased cost of the book. Both the book and the printed page are slightly larger than the last, but, the type being smaller, though perhaps equally clear, the pages contain very much more matter. Hence, the book with some one hundred and nine additional articles, and twelve dismissed, is still sixteen pages less than the last, or the difference between 383 and 399 pages. The work of the publishers' proof-reader is well done, only one single typographical error having been noticed—namely, on page 125, where "platinum oil" is printed for "platinum foil."

As the convention did not at its last session, as it did at the previous one, direct that the copyright revenue be expended in cheapening the book to the public, but directed that the expenses of the committee should be paid from it, the public has now a better book. It is highly probable that the income from the copyright of the Pharmacopœia might be greatly increased by offering it to the competition of several publishing houses, and all the income which could be thus obtained might be most wisely expended

Digitized by Google

upon—and would most likely pay for—all the expert labor involved in the work. When your reporter served as your representative in this committee in 1860, several respectable New York publishing houses applied to him to have the copyright opened to competition, and given to the highest bidder, and your reporter urged upon that committee both the propriety and justice of this course; but the proposition met with neither favor nor support, and was promptly voted down. The committee, however, decided to seek some information from the publishers bearing upon the value of the copyright; but the publishers declined to furnish the information, because it was connected with their business affairs, and the committee was satisfied with this refusal. It was because of such action as this being not infrequent during the two years' deliberations of that committee—and not from an indisposition to work, and to tell freely all he knew, and to travel a hundred and eighty miles a week to do it—that your reporter persisted in refusing to serve upon the present committee—the committee being substantially the same as the preceding one.

The Pharmacopœia begins with the "Proceedings of the Convention of 1870 for revising the Pharmacopœia. Fifth Decennial Revision." And there is no improvement in the meagre and insufficient abstract of the proceedings of this convention which gives to the work its organic existence and authority. In order that this feature might be improved, the convention directed its secretary to employ a stenographer; but the secretary reported that a stenographer could not be had in Washington at that time. The "Proceedings," however, could have been much improved without a stenographer, if only by the publication of the Report of the Committee of Revision and Publication for 1860—short and meagre as this was for so important a work. In the "Proceedings" it will be seen that the convention discussed the general principles, and adopted a general plan, for the new Pharmacopœia, and then, as usual, appointed a Committee of Final Revision and Publication to carry out the plan thus adopted. Among the resolutions which form this plan for the new Pharmacopœia, as adopted by the convention, for the governance of its Committee of Final Revision and Publication, is the following:

"*Resolved*, That measures of capacity be abandoned in the Pharmacopœia, and that the quantities in all formulas be expressed both in weights and in parts by weight."

This resolution, with the others which constitute the plan of the

Digitized by Google

convention, was brought in by a committee of five prominent delegates, and was drawn up in the interest of an important degree of progress in precision and accuracy, which had already been attained in the same way by other national Pharmacopœias. The resolution was freely discussed by the convention, and the practical difficulties, and the labor involved in carrying it out, were fairly pointed out and urged, and were fully considered, and the convention deliberately decided that the advantages to be gained in accuracy and precision would be a true progress, and worth the labor involved; and, after this full discussion, the resolution was adopted by the convention.

This action of the convention was considered by the writer, and by others familiar with the subject, as one of the most important steps that could be taken in a general plan to bring the Pharmacopœia up to the date of its revision; and accordingly, when the new issue appeared, this improvement was looked for, but looked for in vain, for the measures of capacity and the weights of the old issue were found unchanged.

The reasons why the Committee of Final Revision and Publication refused to carry out the directions of the convention in this resolution are given in the preface of the Pharmacopœia as follows:

"To execute such directions, entails the use of a metrical system not employed in this country or in England, and which would have to be constructed for the purpose. Such a change would involve changed proportions in almost every formula, and would produce a corresponding disturbance in many of the doses. Moreover, such directions were not anticipated in any of the revisions handed to the committee; and to institute such extended experiment as would cover the whole ground of the directions of the Pharmacopœia, would entail so much expenditure of time, labor, and cost as to render the plan impracticable. This view of the question was unanimously taken by the committee at a meeting consisting of ten members."

These reasons will have more or less weight as they may be viewed by different persons from different points of view. But, how any reasons, whatever, can justify a committee in refusing to carry out the deliberate directions of the superior authority by which the committee was created, must be generally difficult to comprehend.

To the perhaps prejudiced judgment of the writer the reasons given appear to be those of a committee which did not like labor,

Digitized by Google

and therefore refused it upon whatever pretext could be found. This, however, fails to account for the action of the committee when it is considered that the time and labor involved were mainly of a mechanical and clerical nature, and might have been hired for the purpose, since the whole value of the copyright of the Pharmacopœia was available, by authority of the convention, to satisfy the cost of revision; the committee-men in this, as in all past revisions, generously contributing their own time and labor entirely without cost to the work.

This much-needed and expected improvement in the national Pharmacopœia is, therefore, lost for the next ten years, unless the committee should see fit to avail itself of the authority given by the convention to issue another revision prior to that of 1880.

The Preface is well and forcibly written, and gives a concise account of the prominent features of this revision. The following admirable paragraph will, doubtless, commend itself to all:

"In accordance with the resolutions of the convention, the 'scope of the work has been extended rather than abridged;' and it has been the desire of the committee to adapt it to the wants of our extended country, without losing sight of the conservative character necessarily pertaining to a national Pharmacopœia. Such a work must necessarily follow in the wake of advancing knowledge; it is no part of its mission to lead in the paths of discovery. It should gather up and hoard for use what has been determined to be positive improvement, without pandering to fashion, or to doubtful novelties in pharmaceutical science."

It is, however, unfortunate that an important proportion of the present revision does not correspond to the precept so clearly set forth in this paragraph; as, for example, the introduction of glycerin into thirty-four of the forty-six fluid extracts.

In the summary account of the one hundred and nine additional articles introduced, an excellent opportunity for courtesy if not justice to the British Pharmacopœia was lost, since that standard has been so largely drawn upon by the committee as in some instances to follow its defects, while its advantages are generally improved upon.

The Preface concludes with a very slight allusion to the amount and importance of the labors of the committee, which, though quite proper and entirely consistent with the high character and good taste of the gentlemen concerned, conveys to the ordinary reader no just conception of either the character or the amount of work

Digitized by Google

involved in the duties accepted by them in the interest of their professions.

The Preliminary Notices of the Pharmacopœia are found unchanged.

Under the caption of "Temperature," the term "gentle heat" is still defined, while the similar conventional terms "moderate heat," "regulated heat," etc., are still left without definition.

Under the caption "Stoppage of Bottles" it is still insisted that the words "well stopped" whenever they occur must be translated into "glass stopped;" a mode of expression which takes no more words than that for which it is substituted, while it is certainly more clear and definite. The whole force of this Preliminary Notice is that the words "well stopped" must be read "glass stopped" throughout the Pharmacopœia; but the committee itself seems to forget this, and directs two out of the three collodions, p. 117, and all the tinctures, p. 299, to be kept in "well-stopped" bottles. In the case of the collodions the direction is not simply unnecessary, but will commonly result in the gluing fast of the glass stopper.

The supposed defects of these two captions were brought to the notice of the committee, but without effecting a change.

Percolation, as described in the Preliminary Notices, is substantially unchanged, and the reader might infer that a lapse of ten years had left this important process without noticeable advancement. This, however, is not the true position of the committee, for, on referring to p. 151, a general formula for percolation in its application to the fluid extracts is found in detail. This formula is a modification of that published by Mr. Samuel Campbell, of Philadelphia, in the *American Journal of Pharmacy* for 1869, p. 385, and for 1870, p. 17. By this process Mr. Campbell claims that the medicinal properties of drugs can be practically extracted by a proportion of menstruum, or solvent, much smaller than that indicated by any previous experience. Hence this process attracted the immediate attention of many who were engaged upon the important class of preparations to which it was applicable. The writer, among others, applied it with care, and with that prejudice which is apt to be excited by propositions which, by largely saving labor and expense of material, greatly increase pecuniary profits.

The process in the writer's hands was, however, not favorable in the character of the result. The exhaustions were found to be very inaccurate and imperfect, while these imperfections were often

Digitized by Google

masked by the character of the menstruum employed, and by the deceptive appearances of richness of color and density in the products. Saving of labor and increase of profit naturally hide many defects, and the process soon became popular, though occasionally discredited by pharmacists whose closeness of observation entitled their judgment and their results to respect. This process of Mr. Campbell the committee has adopted, but with the important modification that, whereas Mr. Campbell claims to have his sixteen troy ounces of the drug fairly represented in the first sixteen fluidounces of percolate, and therefore percolates no farther, the committee continues the percolation to twenty-four fluidounces, and evaporates the ten fluidounces last received to two fluidounces, and adds this to the fourteen fluidounces first received. This is a most important advance upon Mr. Campbell's method, but yet, in the writer's experience and judgment, the committee's process is very inadequate, and does not represent the knowledge on this subject at the date of its action.

The Primary and Secondary Lists have been enriched by twenty-seven articles, and would not have been at all impoverished, to say the least, by the omission of an equal number, yet only five articles were dismissed. That view or plan of "extending rather than abridging the scope of the work" which forbids the dismissing of such articles as Absinthium, Allium, Althea, Cataria, Coccus, Hæmatoxylon, Matricaria, Salvia, Sambucus, Santalum, and Statice, from the Primary List, together with most of the articles of the Secondary List, does not seem to the writer to be in accordance with the condition of medical and pharmaceutical science at the date of this committee.

The committee of 1860 ventured so far as to dismiss thirteen of the ancient incompetents of the Secondary List; but the present committee, unable to withstand this sacrifice, have restored two articles then dismissed, as "Substances added to the Materia Medica of the Pharmacopœia." These are the Flesh-colored Asclepias, and the Syriac Asclepias. What these particular "milkweeds" have done for the materia medica within the past ten years your reporter does not know. The only other addition to the Secondary List is Castanea. As far as the name is concerned, this also is a restoration. But, in reality, the Castanea dismissed by the committee of 1860 was the bark of the C. pumila or Chinquapin, while the Castanea now added is the leaf of the C. vesca, or common

Digitized by Google

chestnut. This has, within the past ten years, been occasionally noticed as an efficient remedy in whooping-cough.

The other additions to these Lists, which are only restorations—or the undoing of what the former committee did—are the readmission of Cinchona, which was dismissed as a useless generic name, since all the useful varieties were separately described; the readmission of Conium Seed or fruit, which the committee of 1860 made a great blunder in dismissing; and the readmission of Origanum, which, if important now, this importance has escaped notice in the current literature of the past decade.

A very important advancement has been made by the committee in the direction of greater precision of language in the officinal description of drugs. What, at first sight, would appear to be but a mere change in the form of expression, or a mere multiplication of words, or technicalities, upon closer inspection exhibits a far deeper meaning, and will contribute much toward precision and accuracy. As an illustration of a change, which, though apparently trivial and useless, is yet not so in reality, the word "saturation" has, throughout the book, except in two or three instances, been changed for "neutralization." When it is remembered how the word "saturation" is now applied in chemistry, the change will not appear trivial. On the other hand, the word "sufficient" seems to have found an Anglo-Saxon disfavor that is really trivial With the exception of a few instances, where the enemy must have been napping, it is ruthlessly eliminated, in favor of the word "enough;" but this only in certain positions of the phraseology, for, in the expression "a sufficient quantity," which occurs so much more frequently, it triumphantly holds its place.

The descriptive notes of characteristics and tests, appended to the articles throughout the book, are much improved and extended, and those applying to articles newly introduced are as full and as effective as is practicable. The only serious error in these is under the article Acidum Carbolicum Impurum, p. 11. On next to the last line of the page it is stated that this substance "should not be soluble in less than 20 per cent. of water, thus indicating that it is not an alkaline solution of carbolic acid." This is probably intended to be Crooke's test, which is, in effect, that it should not be soluble in less than five times its volume of water. Besides the extension in both the definitions and notes, several errors of the previous Primary List are corrected in this new List.

At the outset of this Primary List is noticeable the most con-

Digitized by Google

spicuous and most general of all the changes made by this committee. This is the change in nomenclature which, as the Preface states, has been made "in order to place the work in accord with the progress of chemical science."

Here the effort to hold back, and to be conservative, and yet to go on a little, very carefully, seems to have led the committee into a jumble in which chemical science could see no accord. The frequent use, in the same paragraphs, of the old and new nomenclatures, often in their most abrupt contrasts, produces upon the writer the effect of a harsh discord, and must prove to be confusing to physicians and pharmacists; while to those familiar with the new nomenclature the effect must be absurd. This jumble, which pervades the whole book, has its culmination in such names as "Tartrate of Antimony and Potassium." Nowhere is true conservatism more valuable than in an authoritative standard which should govern the every-day practice of arts so important as medicine and pharmacy; and the frequent apparent success of ill-judged, half-way measures, adopted under the name of conservatism, shows how great a load of error can be carried by the little giant truth. If this partial change proves to be an error of judgment of the committee, a weakening of the influence of the Pharmacopœia is to be feared as a consequence. Within the sphere of the Pharmacopœia, the new chemical nomenclature may be considered to be pretty well settled for the next decade, and it would have been a manly policy for progress, to have adopted it entirely until a better one might be developed. It has been well said that the workers in the fields of natural science must hold their facts and occupy their positions as the nomadic Arabs do their tents, in readiness to pick up and move on at any time; and, if this be true, it indicates that neither the new nomenclature or any other can be stable for the future, and that the question of stability need not therefore have embarrassed the committee, to prevent it from taking an advanced position for its decade. On the other hand, the committee might—certainly with safety, and probably more wisely—have decided to retain the past nomenclature for another decade, until the committee's constituency might, from other sources, have become more familiar with that advanced knowledge of which the new nomenclature is but the natural language. But, to adopt neither, yet attempt both, impresses your reporter as a grave error of judgment.

After this great change in nomenclature, it seems puerile to refer

Digitized by Google

to others which, but for this, would be very conspicuous. The words "folia" and "leaves," which ten years ago were changed to "folium" and "leaf," so as to be in harmonious uniformity with "radix," "root," "semen," "seed," etc., are now changed back again to the plural, while "almond," "cubeb," "fig," "nutmeg," "bone," "egg," "prune," etc., are retained in the singular. The words root and bark are omitted from the English translation of many of the officinal titles, and we now read "Quercus alba, white-oak. The inner bark of Quercus alba." "Rubus, blackberry. The bark of the root of Rubus Canadensis, and of Rubus villosus;" and "Apocynum cannabinum, Indian hemp. The root of Apocynum cannabinum." This brings them into harmonious accord or uniformity with "Cinchona," "Ipecacuanha," "Jalap," "Valerian," etc., but the changes do not appear to advantage when. in the subsequent formulas, we read "Take of Blackberry, in fine powder;" "Boil the White-oak," etc. In "Slippery-elm bark," however, the word "bark" is retained in the English name, probably through oversight. The change, or rather the exchange of the names of the officinal alums, seems to have been unnecessary, and, if so, is unfortunate and bad, since it introduces confusion while in no way promoting accuracy, and simply caters to a common usage which is based upon inaccuracy. The name alum was not commonly applied to anything but potassa-alum until after ammonia-alum had been more cheaply made from gas-liquor. Potassa-alum has always been the type and file-leader of the class of alums, as ethylic alcohol is of the class of alcohols, until the committee degraded it and promoted its younger usurping competitor. Had the committee promoted fusel oil, or glycerin, to the name of "alcohol," and degraded ethylic alcohol to the ranks in chemistry, rating it by its chemical constitution simply, this would have been but an exaggerated instance of a similar change. All the past medical reputation of "alum" belongs properly to potassa-alum, the ammonia-alum being comparatively untried till introduced into the last British Pharmacopœia as "Alumen," to the exclusion of potassa-alum.

A general view of the next subdivision of the Pharmacopœia, and the most important part of it, namely, the "Preparations," shows it to be, except in the points already noticed, mainly unchanged. The same array of long and yet insufficient, and now also long obsolete, formulas for Calomel, Cinchonia, Quinia and Morphia salts, etc., is still found, though the advisability of

Digitized by Google

transferring all such to the Materia Medica List, with appropriate descriptions and tests, has been long and earnestly urged by many competent judges here, and has been illustrated by the example of foreign Pharmacopœias. It is really very difficult to know where to draw the line between processes appropriate to practical pharmacy and those which are not; but it must be drawn somewhere by the authority of the Pharmacopœia, and to do this with the least practical inconsistency is what should be aimed at. Hypercriticism never ends, and can neither be well defined nor avoided; but, to refuse logical inferences, and resist reasonable conclusions on account of this, cannot be wise.

It is to be regretted that saffron, an excellent corrigent and stomachic, is omitted from such preparations as vinegar of opium, tincture of rhubarb and senna, and compound tincture of cinchona. The general appreciation of its value, in the latter preparation especially, will not be likely to support this change.

An error in the process for vinegar of squill, which was pointed out soon after the revision of 1860, and has been repeatedly noticed by various authorities since, remains uncorrected, although the process has been rewritten by this committee.

The process for purified chloroform has been rewritten and considerably changed, and the standard of purity has been lowered from "s. g. 1.490 to 1.494" to "1.480." Perhaps, all that the writer should say, in regard to this change, is to enter an earnest protest against lowering the standard; and that, from a considerable experience in the purification of chloroform, the old formula was a very good one, and the changes entirely unnecessary.

The officinal dried alum is now directed to be made from ammonia-alum; the maximum temperature is lowered from 450° to 400°; and the dried ammonia-alum is left with more water in it than the dried potassa-alum, formerly officinal. These changes are taken from the British Pharmacopœia, and therefore the committee adds that high authority to its own against the individual judgment of your reporter.

The process for benzoate of ammonia is taken nearly *verbatim* from the British Pharmacopœia, but the appended descriptive note is much more full than that of the British Pharmacopœia. The reasons for the introduction of this article into the Pharmacopœia are not known.

Bromide of ammonium, p. 83, is an important addition, and the process appears to be a very good one as an outline for any one

Digitized by Google

who wants to make it. The last paragraph on the page is not clear —or at least is not understood by the writer—for, if no greater precision is attained than that indicated in the process, there will be more than two-tenths of a grain of moisture left in the salt, and then the seventeen grains of nitrate silver will decompose the whole of the bromide, and the further addition of nitrate-of-silver solution will cause no cloud.

Purified chloride of ammonium, p. 84, is also a useful addition, but the process is defective in adding the water of ammonia to a hot solution of the chloride, and in continuing the heat before filtration. Upon the large scale, at least, this does not accomplish the object, and the preparation will not, in a large majority of instances, stand the test by tannic acid, as given in the paragraph of tests.

Iodide of ammonium is another important addition.

The article on valerianate of ammonia, p. 85, has been rewritten with no perceptible advantage; but the note of description and tests, which is far more important, and is deficient in not identifying the separated acid, is unchanged.

In the process for oxysulphuret of antimony, p. 88, 7th and 8th lines from the foot, the phraseology is changed decidedly for the better.

Under carbonic-acid water, p. 90, an important paragraph is added to prevent insidious contamination with copper and lead, though the tests given would detect these metals as well as others if present.

Under water of ammonia, p. 91, the phraseology is altered for the worse on the 15th and 17th lines from the top, since, if the phrase be grammatically construed, the "glass tube," and not the distant "two-pint bottle," is described as containing the water. Such points, however, would be surely hypercritical, except when they are the only changes, and changed from a better phraseology to a worse.

Creasote water, p. 94, should be filtered through a *wet* filter to prevent the passage of oily particles.

Under distilled water, p. 95, the new Pharmacopœia adheres to the phraseology of the old, where the direction is, to "distil two pints, using a tin or glass condenser, and throw them away." Query, what is to be thrown away? This peculiar phraseology was pointed out to the committee, so that it must be concluded that they consider it correct as it stands.

Digitized by Google

The processes for subcarbonate and subnitrate of bismuth, pp. 103, 104, are somewhat changed and much improved in several points.

The process for animal charcoal. p. 109, is amended materially by the direction, before omitted, to "heat it to redness, and, when cool, keep it in well-stopped bottles," but unfortunately, this important amendment needs further amendment, for, unless the words "out of contact of air" be added after "heated to redness," the charcoal may be burned up.

The name of "Ceratum adipis, cerate of lard," is now changed to "Ceratum, cerate," p. 109. And Unguentum adipis, ointment of lard," to "Unguentum, ointment," p. 326. At the last revision, these were, with rather doubtful propriety, changed from simple cerate, and simple ointment, to lard cerate, and lard ointment. But now, apparently to get them into harmony with "Syrupus, syrup," and "Mel, honey," they are again changed, so that the adjective, or qualifying, or class distinction of the name, stands by itself. But, as the other parallel class distinctions, such as decoction, infusion, solution, spirit, tincture, etc., could not with propriety be used in this way, the discord is still as great as ever. The physician, who follows the Pharmacopœia but sends to a pharmacist who does not know it critically, may have his prescription returned to him as incomplete. The change seems altogether uncalled for, unnecessary, and unwarranted.

The class "Chartæ," comprising two articles, is new. All the blistering and mustard papers now commonly used are, so far as your reporter's information and inquiries go, untrustworthy, and, where such things fail, valuable time is often lost. The cantharides paper is taken, with slight modification, from the British Pharmacopœia; and the mustard paper is probably that of Mr. Crew, or something like it. If from these sources, and materially modified, the modifications may make them keep well, as the original preparations do not. At best they may be best classed with those "doubtful novelties of pharmaceutical science" which the Preface tells us the Pharmacopœia should not pander to.

The Pharmacopœia cannot be followed in keeping two out of the three collodions, p. 117, in "well-stopped," that is glass-stoppered bottles, unless an almost impossible degree of care be taken not to get the collodion upon the neck of the bottle or stopper to glue the latter in. A cork, when glued in, can be dug

Digitized by Google

out in pieces and a new one substituted; with glass this is more difficult.

The previous errors in the process for the confection of senna are properly corrected, and the formula and process are now unexceptionable.

The formula and process for digitalin are introduced with slight modification from the British Pharmacopœia.

In the officinal names of several of the alcoholic extracts, the characteristic word "alcoholic" is left off, as in those of aconite, arnica, colocynth, digitalis, etc., thus making the names harmonize with those of the watery extracts, while they are really equally alcoholic with those of belladonna, conium, and hyoscyamus, where the word alcoholic had to be retained to distinguish between the more feeble watery extract of the fresh plant and the stronger alcoholic extract of the dry plant. Even to physicians and pharmacists, who are pretty well educated in the materia medica, this distinction has not been fully learned and appreciated in the past, and, now that a new and serious element of confusion has been introduced, it will be fortunate if grave mistakes do not occur.

Extract of American hemp is introduced, and is, so far as the writer knows, entirely new to the professions of medicine and pharmacy. A single monograph, written by Dr. H. C. Wood, Jr., of Philadelphia, contains all the knowledge on the subject; and, adopting the principle laid down in the Preface, the new Pharmacopœia follows in the wake of this single beam of "advancing knowledge," to gather it up and hoard it for use.

The formula for compound extract of colocynth is very much improved by taking purified aloes and an increased proportion of cardamon, but is still defective in mixing the separate powders instead of combining them by heat so that the soap, resins, and aromatic, may unite and form a compound rather than a mixture.

The extract of jalap, p. 143, still contains the expensive, inert, useless, and very troublesome watery extract, which more than ten years ago was taken in boluses large enough and repeated often enough to determine its character, and that by one of the members of the present committee. The committee seems persistently to refuse this as "advancing knowledge;" but in the parallel case of the extract of podophyllum, p. 146, gives a very much improved formula and process excluding this watery extract.

The extract of Calabar bean, p. 145, is an important addition,

Digitized by Google

but the substance is taken in too coarse a powder, and the exhaustion is insufficient.

Under the important sub-head of fluid extracts, a model process of percolation is first given. At the last revision model processes were rejected, first, upon the ground that in a book of reference, like the Pharmacopœia, each article referred to should be found complete; and, again, as a more intimate knowledge of the characteristic peculiarities and differences in drugs was obtained by investigation and experience, it was considered that no model process could be equally applicable to any considerable number of substances. Increasing knowledge and experience seem to have justified these conclusions of the last committee, yet the present one has reversed the action.

The revision of 1860 contains 25 fluid extracts, all of which are retained in this revision except that of conium. Of the 24 retained, 10 contained sugar. This ingredient proved objectionable in practice, and the writer among others soon found that where sugar was desirable glycerin was far better, and these results were freely published, and glycerin was fully tried, though not always with the expected advantages. Nevertheless, wherever sugar had been considered indispensable, there seemed no doubt but that glycerin was better, and the writer everywhere advocated the substitution, but never its extension to other fluid extracts. Within the past two years, the practice of pharmacists and the usage by physicians both seem to indicate that, where glycerin is not absolutely necessary, it is objectionable. Such views are, however, not accepted by this committee, for, in following out their modification of Mr. Campbell's plan for the officinal fluid extracts, they have not only substituted glycerin for the sugar in the 10 old fluid extracts which contained sugar, but have introduced it into 7 of the remaining 14 old fluid extracts after ten years' experience had proved it unnecessary, leaving now only 7 of the original 24 without it. Then the committee introduced 22 new fluid extracts, 17 of which contain glycerin, thus making a total of 46, of which the large proportion of 34 contain glycerin. This new officinal feature will not probably be generally followed and should not, and the Pharmacopœia will have to be satisfied with that degree of loyalty which adopts its now uniform strength for fluid extracts whereby each minim represents a grain of the drug from which it is made. Some other curious changes are unaccountably made in both old and new fluid extracts whose present value has been long established.

Digitized by Google

The process for tartrate of iron and potassa, p. 178, is not corrected, and it is therefore still impracticable.

Citrate of iron and strychnia, p. 179, is a new article of some importance, and the process seems to be a good one.

A new class of glycerites, p. 187, is introduced apparently from the British Pharmacopœia, since four of the five are found in that work. This may prove to be a useful class of preparations for external application.

In the formula for yellow oxide of mercury, there is an error which defeats the process, and yields oxychloride. The quantity of solution of potassa should be twenty-five troy ounces, instead of seventeen, p. 193.

Aconite liniment, p. 205, is also a useful addition, but it is in reality a fluid extract both in mode of preparation and in strength, and why it should be introduced here, as a liniment, it is difficult to understand, unless it be to secure it against internal administration. If this be the reason, it is not a good one, for the Pharmacopœia cannot wisely undertake to legislate against mistakes by erratic names.

The errors of directing purified chloroform in the chloroform liniment, p. 207, and in the solution of gutta-percha, p. 215, are still retained, though a commercial chloroform is provided for external uses.

The formula and process for soap liniment, p. 207, are reformed and very much improved.

An important alternative process is given for solution of acetate of ammonia, p. 208, which must prove to be a great advantage as well as a convenience, since it will always be freshly made as dispensed. It might have been wisely substituted for the old process,

A solution of chloride of iron, p. 211, is introduced, which is but the first part of the old process for the tincture of the chloride of iron, and then this solution is directed, at p. 208, to be used in making the tincture. This is simply making two preparations out of one, and, if the intention be to keep the materials separate and make the tincture as wanted, it is a mistake, because the older the tincture is the better, on account of the reactions which take place slowly for the production of an ether which is important to the preparation.

The process for solution of citrate of iron, p. 212, is rewritten, and materially improved.

Digitized by Google

The one-grain solution of sulphate of morphia is still retained, while an officinal formula for Magendie's solution is refused. If local usages are to be provided for in simple solutions, both should be supplied. If confusion and mistakes are to be avoided, both should be excluded, and be left to magistral prescription.

The process for chloride of zinc, like that for tincture of chloride of iron, is divided into two, and a solution of chloride of zinc is introduced at p. 223.

A citrate of lithia is very properly introduced, and by a good formula.

The processes for the oleo-resins are all rewritten, and improved; and a new one, oleo-resin of fern, meaning male-fern, is introduced.

Under the sub-heading of pills, p. 241, the Pharmacopœia is made again to depart from the admirable precepts of its Preface, and to illustrate how different it is, and how much more easy, to know a thing to write it, and to know a thing to do it. It cannot be too often quoted that the Pharmacopœia "should gather up and hoard for use what has been determined to be positive improvement, without pandering to fashion, or to doubtful novelties in pharmaceutical science."

Now, it is stated here as a mandate of this highest authority in the nation, that "the practice of sugar-coating pills is approved in reference to pills which are expected to be slow in their operation, but is of doubtful propriety in regard to those intended to act quickly, as the coating retards the solution of the pill-matter in the liquids of the stomach." When the Pharmacopœia thus goes half-way over to the wholesale pill-makers, the first question is, as to whether sugar-coating be a positive improvement which should be gathered up for use. If it be so, then the question of "pandering to fashion, or to doubtful novelties" in the drug-trade—for this is not pharmaceutical science in any sense—does not come up? If it be true that medicines commonly go into an empty stomach, and that when the organ is empty it is but a quiescent portion of the intestinal canal which would at once pass a bland, unirritating particle, like a sugar-coated pill, through the pylorus, the question of sugar-coating being a positive improvement must be considered as decided in the negative. But there is another aspect to this subject, which is of greater importance. Is the medical profession ready to hand over to the tender mercies of competing tradesmen another important class of medicinal agents, with the full knowledge that in so doing they must of necessity lose all check and control

Digitized by Google

over it, and therefore must abandon all notions of precision and accuracy. In these cases we cannot afford to wait for evolution to determine the survival of the fittest, for the faithful manufacturer who may use the best materials and put on the most soluble coat with greatest skill cannot sell at the same price or profit as his less faithful competitor, nor can he spend so much upon agents and advertising; and, the landmarks of quality being all removed, the whole question is left open to that most precarious of all testimony, namely, individual judgment based upon casual observation.

Such changes as that made in the alums, the lowering of the specific gravity of chloroform to the trade standard, and this partial approval of sugar-coated pills, subject this committee to the charge of concession to the unsafe interests of trade in matters of vital importance.

The formulas for pills have all been rewritten with much care by a practised hand, without material change in proportion or dose, and are made to apply to small quantities applicable to the wants of dispensing pharmacists, so that they may always be comparatively fresh and soft. This, to a certain extent, obviates the necessity of adding glycerin to the formulas, to keep the pills from becoming hard. The tone and tendency of these changes is quite in opposition to the indorsement of sugar-coated pills, and will go far to induce the dispensing pharmacist to make his pills for himself. And, if this be skillfully done, there is no necessity whatever for sugar-coating. It is to be regretted that this practised hand, which worked out these formulas, did not add the direction that pills should be kept in bottles.

The matter upon p. 249, of the pills, seems to be out of its proper alphabetical order, without any other discoverable reason than that the masses are not divided into pills as all the others are. This dislocation, however, renders these formulas liable to be lost when sought for by alphabetical order.

The processes for two of the resins are rewritten, with great improvement and advantage.

The British Pharmacopœia process, sometimes known as Redwood's process, for spirit of nitrous ether, is adopted instead of the old one. The writer has never tried this process, but feels confident that an error is involved in the use of sulphuric acid and copper. It is, however, much more certain that a grave error has been made by the committee in the quantity of stronger alcohol taken, and the quantity of the resulting product. Had the com-

Digitized by Google

mittee copied their authority more literally, they would have escaped the great blunder of making seven or eight pints of the spirit from "four troy ounces and a half" of nitric acid. These proportions yield a preparation of about one-fourth the strength it should be, and must be, in order to answer the requirements of their note of tests. The writer having made thousands of pounds of this preparation with great success by the old formula, and repeatedly upon the scale of the Pharmacopœia, is at a loss for any reason for this change in this important preparation.

In the formula for suppositories of lead and opium, the oil of theobroma is left out, p. 287.

Heat is still very mistakenly insisted upon in the process for syrup of iodide of iron, p. 291.

Tincture of aconite-leaf is dismissed, though called for perhaps quite as often as many of the articles introduced, while it must necessarily be kept by the pharmacist, to fill those prescriptions which call simply for tincture of aconite.

Notwithstanding all that has been written at home and abroad, the committee seem to be only one-quarter converted to the advantages of the dried, unripe fruit of conium over the leaf. They advance so far as to admit the fruit, and make the fluid extract from it; but still make the extract, alcoholic extract, p. 138, and the tincture, p. 307, from the leaf; and besides, introduce a bad new preparation, juice of conium, which they also make from the leaf. Why they refuse such authority as Dr. John Harley, of London, especially as it is supported by abundant testimony at home, your reporter cannot understand.

In the troches of bicarbonate of soda, nutmeg is found in the formula, but not in the process. Which is in error?

In a new preparation, ointment of cantharides, introduced at p. 328, is a curious instance of novelty. Two cerates are mixed, and called by the committee an ointment. How the mixing can change and reduce the consistence, as implied in the name, is difficult to understand.

The old defective process for acetate of zinc is abandoned, and a good process is adopted in its stead.

The tables usually found at the end of the preparations, giving a summary account of all the changes made, are increased in number by one; and six new tables of weights and measures have been added. These give the officinal and metrical systems, and their common and most useful relations to each other, and their approxi-

Digitized by Google

mate equivalent values. In giving the value of the gramme in grains, the later and more correct determinations are not accepted by the committee. The equivalent given by Gmelin, "Handbook," p. ix, from authorities of that date, is 15.44242 grains. This determination was subsequently corrected to 15.4346, and again to 15.4340 as given in the U. S. Dispensatory. But the value generally accepted at this time, as the result of greater precision in the weighings, is 15.4322 grains, as determined by U. S. authority in the Bureau of Hydrography in Washington. The new Pharmacopœia gives 15.434.

The convention of 1860 directed that the Index of the Pharmacopœia should "have its names so marked for the quantity of the syllables that it may serve as a pronouncing vocabulary of the materia medica." This was well done by the former committee, and your reporter can attest the utility of such a standard for reference, to correct the many common errors of pronunciation against which this provision was made. It is to be regretted that the present committee did not allow this index to stand, even with its very few doubtful renderings. At the present revision, the index is merely accented, thus leaving the *c* and *ch* to be rendered either hard or soft, though the *g* is marked, and leaving the vowels entirely unmarked for quantity.

In a retrospective view of the materia medica for the past decade, it will be seen that the number of articles proposed and used, and the voluminous and inconsistent testimony in regard to them, are unprecedented; and hence it must appear, to the most casual observer, that the work of the committee in selecting articles for admission was unusually difficult and laborious. This difficult work the committee has accomplished with a judgment so generally good that exceptional instances become the more conspicuous. As an instance of this exceptional character, they introduce the hypophosphites, now pretty well worn out, and pretty generally rejected, though still possibly entitled to the place; but reject pepsin, which stands so very much in need of a pharmacopœial description and tests.

Your reporter here gives up the disagreeable and tedious labor of having so much of this important national standard to object to. It is a work at which he hesitated and halted, and it never would have been undertaken but from a sense of paramount duty. He therefore begs a few words of personal explanation in concluding the disagreeable task.

Digitized by Google

Let no man infer from what has been here written that the writer places himself in an attitude of hostility to the United States Pharmacopœia; or that he in any degree withdraws any part of the influence he may be able to exert from earnestly supporting it. On the contrary, if he knows his own position in the matter, it is that of unchanged, honest, earnest fidelity to the National Standard, and unchanged disposition to work for its improvement.

Digitized by Google

ARTICLE IV.

A Sketch of the Progress of Otology. By D. B. St. John Roosa, M.D., Professor in the University of the city of New York, Surgeon to the Manhattan Eye and Ear Hospital.

There is perhaps no department of the art and science of medicine in which there has been so much literature, with so little exact, or as we say, scientific knowledge, as that which was formerly known as aural medicine and surgery, but which is better designated by the term Otology.

460–370 B. C.] Hundreds and perhaps thousands of volumes have been written on the anatomy, physiology, and diseases of the ear, from the time of Hippocrates until our own day, and yet until the age of Valsalva, the seventeenth century, the treatment of the affections of the organ of hearing was purely empirical, while the knowledge of its anatomy and physiology was often incorrect and fragmentary. Even after the investigations of the famous Italian, investigations which consumed sixteen years of his life, and the subsequent anatomical discoveries of the eighteenth century, it was reserved for our own day and generation to place the science of otology, or the knowledge of the anatomy, physiology, and diseases of the ear, on a level with that of other fields of labor in medicine.

A singular apathy in regard to the maladies of one of the most important organs of the body, an inexplicable ignorance as to their results, a most irrational and empirical manner of treatment, have been our heritage from the fathers. Probably to-day, in the closing years of the nineteenth century, there are more practitioners of medicine who view aural medicine and surgery from the stand-point of the errorists of the dark ages, than there are in any other field. It is to be feared that even now many wise and skillful men do not know, that to drop stimulating or even anodyne applications upon a membrane which they have never examined, to probe an ear for wax that they cannot see, are purely empirical practices which every conscientious physician should hold in abhorrence.

The great reformer of this science, *Wilde*,* wrote, as late as 1853, that "the affections of the ear, whether functional or organic, are spoken of, lectured on, written of, and described (even in great part

* Aural Surgery, English edition, p. 7.

Digitized by Google

to the present day), not according to the laws of pathology which regulate other diseases, but by a single symptom, that of *deafness.*"

It is with no desire to recount the details of the long and painful story of the gropings in the dark, which have characterized the teachings on otology from the days of the philosopher of Cos, until the seventeenth century, that the author attempts an historical sketch of our progress up to our present position. He has neither the time nor the facilities for such a task; but he has simply aimed to sketch the outline history of otology, from the sources to which he has been able to gain access, in such a manner as to show the obstacles which, until twenty years ago, have prevented the satisfactory progress of the science.

The authorities which I have consulted in this history will be found at the close of the article; but I must first of all make especial acknowledgment of my indebtedness for the greater part of my material to that valuable compendium, *Lincke's Handbuch der Ohrenheilkunde.* I have, however, consulted the original authorities as far as the best medical library of New York, that of the New York Hospital, and my own, would permit. Where no other authority is given in a foot-note, Lincke is the one from which I quote, and often by an exact translation.

The discoveries and teachings in the anatomy of the ear will be first reviewed, after which the progress in the examination and treatment of its diseases will be noted.

PROGRESS IN THE ANATOMY OF THE EAR.

Hippocrates probably knew very little of the anatomy of the ear, although it is supposed on doubtful grounds that *Alcmæon,*

570 B. C.] a disciple of Pythagoras, was aware of the passage that led from the cavity of the tympanum to the throat, inasmuch as Aristotle quotes him as saying that goats breathed through their ears.

384–322 B. C.] The knowledge of Aristotle, as to the anatomy of the ear did not go beyond the membrana tympani.

Rufus of Ephesus, who was the first medical lexicographer, and who lived in the age of Pliny,* used the names helix,

A. D. 98–117] lobe, tragus and anti-tragus, which are still employed to describe the different parts of the auricle.

Marinus, the preceptor of Galen, and whom Galen named the restorer of anatomy, called the acoustic and facial nerve one, under the name of the fifth pair.

* History of Medicine. Dunglison, p. 166.

Digitized by Google

A. D. 130] *Galen* does not seem to have made any great advance in anatomical studies, and they were greatly neglected down to the fifteenth century. The darkness of the blind leading the blind is scarcely broken for thirteen hundred years. What Galen wrote was authority, and naught else. One valiant skeptic in medicine would have effected more good during these centuries than all the ponderous tomes that were written by philosophers who reasoned upon premises that had never been thoroughly established. So late as 1559, one Doctor *Geynes* was called before the College of Physicians, in London, for impugning the fallibility of Galen. On his acknowledgment of his error, however, he was again received into the college.*

The strong arm of the church, in the dark ages, prevented anatomical investigations on the human cadaver, and for hundreds of years anatomical knowledge remained at a stand-still.

Galen, however, corrected the error of his preceptor in thinking that the facial and acoustic nerves were one, and showed that the latter entered the *meatus auditorius internus*, a passage which his predecessors had regarded as impermeable. He gives no account of the anatomy of the internal ear, although he compares it to a labyrinth, a name which Fallopius, fourteen hundred years later, fastened on it forever.

There is no record of the ossicula auditus until the fifteenth century. Two Italian anatomists, *Achilini* and *Berengario*, were
1480] the first to describe these bones, although they were not the discoverers of them.

Berengario also first described the membrana tympani "with exactness." The exactness of his knowledge may be shown by the fact that he was doubtful whether the origin of the membrane was from the acoustic nerve, or the meninges of the brain.

1542] *Andreas Vesalius*, who is said to have been the most accurate anatomist of his day,† described the long process of the malleus, the Eustachian tube, the vestibule, and the semi-circular canals.

1604] The honor of the discovery of the stapes bone is claimed by no less than three anatomists, viz.: *Ingrassia*, *Columbo*, and the renowned *Bartolommeo Eustachius*. The former wrote commentaries upon Galen's works that were published long after his death. He claims to have shown it to his scholars in 1546, at Naples.

---

*Chambers' Encyclopedia. American edition. Article, Galenus or Galen.
†Dunglison. History of Medicine, p. 233.

Digitized by Google

1523–1562] *Gabriel Fallopius*, of Modena, died in the bloom of youth, at the age of 39,* but he lived long enough to accomplish much for anatomical science. He showed, among other valuable points in the anatomy of the ear, that the mastoid cells communicated with the cavity of the tympanum. He described the fenestræ rotunda and ovalis, and gave his name to the canal in which runs the facial nerve in its passage through the cavity of the tympanum, *acquæductus Fallopii.*

The great *Cuvier* regarded *Vesalius*, *Eustachius* and *Fallopius* as the three anatomists of the sixteenth century to whom belongs the honor of having restored the science of anatomy.

1500–1574] *Bartolommeo Eustachius* described the tensor tympani as well as the stapedius muscle. He also gave a more exact account of the tube leading from the pharynx to the middle ear, which is called the Eustachian tube, although it was discovered by *Vesalius*. Eustachius also gave a superficial description of the cochlea.

It is said that if poverty had not prevented Eustachius from publishing his anatomical plates, anatomy would have attained the perfection of the eighteenth century some two hundred years earlier.†

1587] The first monograph on the anatomy of the ear was from the pen of *Volcher Koiter*, a student of Fallopius. It contained no original observations, however.

1543–1573] *Constant Varolius*,‡ so well known from his descriptions of the brain, made the singular mistake of supposing that the muscles of the cavity of the tympanum were nerves which were torn by the sawing through of the bone. Subsequently he admitted this error; but he went so far to the other side as to say that the tensor and laxator tympani muscles could be moved at will.

1537–1619] Lincke§ does not think that the famous *Fabricius* of Acquapendente contributed very much to our knowledge of the anatomy of the ear, while he led many away into error as to some points. For example, he thought that the chorda tympani nerve was a peculiar body, and not a nerve. At any rate, Fabricius did good service by his labors as a comparative anatomist, and it should be remembered that he was the instructor of the discoverer of the circulation of the blood.

---

* Chambers' Encyclopedia. Article, Fallopius.
† Chambers' Encyclopedia. Article, Eustachius.
‡ Biographie Médicale. Paris, Pankoucki.
§ Handbuch, Bd. I., s. 14.

Digitized by Google

1593–1609] *Julius Casserius*, who was a professor in Venice in 1609, a pupil and subsequently a rival of Fabricius, described the fissures that make the cartilaginous portion of the canal so flexible. He and Fabricius described the lexator tympani minor in the same year, and both claim to have discovered it first. Casserius also gave a better description than had hitherto been done of the membrana tympani, the ossicula auditus, and the labyrinth. He was the first to describe the three and a half turns of the cochlea and the membranous zone.

1665] The ceruminous glands, whose function and physiological action were first described by *Nicolaus Stenon*. Lincke speaks of him as Stenson; but this must be a mistake in transcribing the name of the great Danish anatomist.

Passing on to the eighteenth century, we find *Antonine Marie Valsalva* rising up a head-and-shoulders above the anatomists of his age, and far exceeding his predecessors in the amount and exactness of his knowledge. He devoted more than sixteen years of his life to the study of the anatomy of the ear, and for the purpose of its study dissected more than a thousand heads. His master-work was a treatise on the ear.* This work passed through five editions in a short time. He described the attachment of the tensor tympani to the Eustachian tube. He made the mistake, however, of supposing that the ossicula auditus had no periosteum, and that the cavity of the tympanum was connected by many openings to the cavity of the cranium. He discovered the muscle that dilates the Eustachian tube and moves the uvula. He also showed that the fenestra ovalis was covered by membrane. His anatomical plates show a good knowledge of the cochlea and semi-circular canals.

Morgagni, himself an original investigator, a student and friend of Valsalva, edited his master's work, and made some additions.

Of Valsalva's contributions to the treatment of the ear, which were quite as important as his anatomical investigations, we shall have occasion to speak in the second part of this sketch.

1714] Valsalva had a rival, whose name the lapse of time has well nigh effaced—*Raymond Vieussens*—who also wrote a work on the ear. He gave new names to various parts of the organ, but his descriptions are said by Lincke to be so mysterious, that his contemporaries could not understand them.

1717] *Rivinus*, professor in Leipsic, observed an opening in the membrana tympani, which he believed to be a constant anato-

* Tractatus de Aure Humana. Lugdeanum Batavorum, 1742.

Digitized by Google

mical condition. This supposed discovery excited the warmest discussion among such anatomists as *Walther*, *Ruysch*, *Morgagni*, *Cassebohm* and *Valsalva*. *Hyrtl*, the present distinguished anatomical teacher of Vienna, showed that it was a rent in a macerated membrane; but his predecessor, *Berres*, believed in its existence and described it minutely.*

Quite recently Professor Bochdalek, of Prague, has revived the question,† and has described the foramen of Rivinus as a constant opening in the membrana tympani; this author says that there are sometimes two. It is, however, according to Bochdalek, so small as not to be seen without the aid of a magnifying glass.

In a discussion in one of the medical societies of Vienna,‡ Professors von Patruban, Gruber and Politzer unite in affirming its existence, thus confirming Bochdalek's statement.

1718] The famous *Ruysch* (Frederick), professor in Amsterdam, contributed to our knowledge of the distribution of the vessels of the cavity of the tympanum, and corrected Valsalva's statement that the ossicula were not covered by periosteum.

1730] *Cassebohm* (Joan. Frid.), published a monograph upon the ear, in six parts, which Lincke calls "a monument to the German industry and spirit of inquiry of the time." "Ein Denkmal deutschen Fleisses und deutschen Beobachtungsgeistes."

He disproved Valsalva's idea of the close connection between the cavity of the tympanum and the cerebrum; he described the cochlea, and the development of the auditory apparatus in the fœtus.

1747–1753] *Brendel* and *Zinn*, two Göttingen anatomists, the latter of whom is well known as the describer of the suspensory ligament of the lens, known as the zonula of Zinn, made further investigations as to the structure of the cochlea.

1761] *Dominic Cotugno*, or *Cotunnius*, the discoverer of the fluid of the labyrinth, won such a reputation by his work upon the internal ear, that he was called to the anatomical chair at Naples. He was the first clearly to show that the labyrinth was filled with fluid, and that this was one of the necessities for the perception of the undulations that we call sound.

1747–1832] *Antonio Scarpa* issued a work on the structure of the ear, which brought the knowledge of its inner arrangement to such a height that it seemed to his contemporaries that

* Prager Viertel. Yahrschrift, 1866, I.
† Troltsch on the Ear, 2d American edition, p. 26.
‡ Monatsschrift fur Ohrenheilkunde, Jahrgang III., No. I.

Digitized by Google

there was little more to be done. The investigations of our own day have shown how premature was this expression. Scarpa wrote upon the fenestra rotunda, which connects the tympanic cavity with the lamina spiralis of the cochlea. He described the osseous labyrinth with exactness, the membranous labyrinth, and the expansion of the acoustic nerve.

Scarpa was secretary to the octogenarian Morgagni, when the latter had lost his sight, and he wrote letters of advice in Latin at the dictation of his blind preceptor.

1797] *Alexander Monro*,* "Professor of Anatomy, Medicine and Surgery," in the University of Edinburgh, was the author of a monograph on the organ of hearing in man and other animals. It is a fine specimen of typography. In his preface he states that Dr. Camper called in question his description of the semi-circular canal in whales, and that *Scarpa* said that some of his teachings in regard to the human ear were erroneous. Professor Monro claims to have been the first anatomist to trace the auditory nerve within the cochlea, vestibule and semi-circular canals. He quotes from Valsalva, Winslow, Cassebohm, Haller, Cotunnius, Meckel, and others, to show that none of these anatomists had traced nerves into the cochlea. Dr. Monro seems to make out a good case for himself as against Scarpa, as far as I have been able to determine, and to be entitled to the credit of having traced the nerves into the cochlea before with greater minuteness than Scarpa, and appears to have been correct in his comparative anatomy.

1800] *Mr. Everard Home* wrote an excellent, and, for its time, exact account of the membrana tympani in a paper for the Royal Society.† The measurements are accurately given, but Mr. Home supposed that the fibrous layer was muscular. He seems to have been a comparative anatomist of great ability.

1806] *Samuel Thomas Soemmering*, a great name in anatomical science, contributed to otology by a series of plates of the anatomy of the ear, which are almost as well worth study to-day as they were seventy years ago.

1832] *Henry Jones Shrapnell* contributed a series of papers to the London Medical Gazette.‡ He described the membrana flaccida of the drum-head, its nerves, with clearness and accuracy. His description of the former is available for the student of the present

* Three treatises on the Brain, the Eye, and the Ear. Edinburgh and London, 1797.
† Philosophical Transactions, 1800. The Croonian Lecture.
‡ Vol. X., 1832.

Digitized by Google

time, and Shrapnell's membrane is probably firmly fixed in the nomenclature of the anatomy of the ear.

1832] *Thomas Buchanan*, of Hull, brought out a monograph illustrative of the anatomy and diseases of the ear. His ideas as to the importance of the cerumen produced many errors in treatment, from which the profession has not yet fully recovered. He published four works; the title of the last one illustrates what has just been said: "Physiological Illustrations of the Organ of Hearing, more particularly of the Secretion of Cerumen, and its effects in rendering Auditory Perception acute and accurate."*

1836–39] The distinguished English surgeon *T. Wharton Jones, Esq.*, contributed to a great cyclopædia an article on the organ of hearing, which comprised all that was known up to that time, and which is a very valuable monograph for reference.†

1824–51] We are now, in our review of the investigations of the anatomy of the ear, down nearly to our own time; and we come to the familiar names of *Huschke*, *Arnold*, *Schlemn*, *Johannes Müller*, *Breschet*, *Bonnafont* and *Toynbee*.

1851] *Toynbee*‡ investigated anew the membrana tympani. He especially added to our knowledge in regard to the fibrous layer, and described, for the first time, the dermoid layer. This paper was published in the Philosophical Transactions. It was preceded by papers in the Medico-Chirurgical Transactions, on the pathological anatomy of the ear—papers which have given *Toynbee* lasting fame, because they did very much to place otology upon as sound a basis in pathology as they had been placed in anatomy by the labors we have enumerated.

Toynbee's statement, that the Eustachian tube was usually a closed canal, and that muscular action was required to open it, led to Politzer's method of inflating the ear, of the value of which pro cedure more will be said in our review of the progress in therapeutics.

Corti,§ an Italian anatomist, reviewed the work of his countrymen of the former centuries who studied the cochlea, and divided the lamina spiralis membranacea into two different broad zones—an inner one, *Zona denticulata;* and an outer, *Zona pectinata.* He described some peculiar bodies as teeth, which soon got the names of *Corti's organ*, and which were subsequently found to be the termination of nerves.

* Mr. Wilde on the early history of Aural Surgery. Dublin Medical Journal, 1844, p. 441.
† Cyclopædia of Anatomy and Physiology. Edited by Robert B. Todd.
‡ Diseases of the Ear. American edition.
§ A Manual of Histology, by Stricker, 1054 (Translation).

Digitized by Google

1856] *Von Tröltsch* began a series of anatomical investigations, which, we may hope, have not yet ended. His contributions relate to the structure of the membrana tympani, the muscles of the Eustachian tube, and the pathological anatomy of the middle ear. He also, in the course of some investigations of the cavity of the tympanum of the fœtus, found that it was filled with a proliferation of the mucous membrane of the labyrinth wall, which forms a mucous cushion, that rapidly lessens in size after birth. This anatomical fact explained the frequency of inflammations of the middle ear in young children.

1858] *Gerlach** followed Toynbee in the investigation of the fibrous layer of the membrana tympani, and showed that in the extreme periphery the circular fibers were wanting.

1860] *Magnus* investigated anew the articulations of the ossicula, and showed that there was no real joint between the malleus and incus. He also denied the voluntary or involuntary contraction of the tensor tympani muscle.

1862] *Politzer* and *Lucæ* published the results of experiments which were supplementary to those of Müller, in showing that the origin of a certain crackling sound in the ear was not in the tendon of the tensor tympani, but in the Eustachian tube.

Claudius Böttcher and *Deiter* followed Corti in investigations of this part, and their labors are still being carried on.†

1858] *Hyrtl*, an anatomist of great industry and reputation, made an important discovery of the frequency of a thin and porous bony covering to the roof of the cavity of the tympanum, thus elucidating some cases of cerebral disease arising from affections of the middle ear.

Our review now extends to the time of the publication of the Archiv and the Monatsschrift für Ohrenheilkunde, as well as to that of the American Journal; the Archives of Ophthalmology and Otology; to familiar ground, which, therefore, demands no discussion at this time.

Progress in Aural Therapeutics.

In the earlier ages the progress in the treatment of the ear by no means kept pace with the advance in the knowledge of its anatomy. While the structure of the organ was sufficiently well understood to cause the investigation of its diseases to be both interesting and

* Schwartze, Archiv für Ohrenheilkunde. Bd. I.

† For the material for the sketch of the preceding page, I am indebted to *Schwartze*, Archiv für Ohrenheilkunde. Bd. I.

Digitized by Google

profitable, the treatment was crude and illogical, unworthy of the knowledge which should have been its basis.

Herodotus* says that there were specialists in Egypt, a particular physician for each disease, but no mention is made of aurists. "The art of medicine is thus divided amongst them: each physician applies himself to one disease only, and not more. All places abound in physicians; some physicians are for the eyes, others for the head, others for the teeth, others for the parts about the belly, and others for internal diseases."

Although Hippocrates knew very little about the anatomy of the ear, he speaks at some length of the causes of aural disease. For many of these he must have drawn upon his imagination. They were very comprehensive, and may properly be said to explain almost anything. They are such as heat, cold, dryness, moisture, the blood, mucus, and the yellow and black bile.

Hippocrates considered internal inflammation of the ear as essentially an inflammation of the head. He described as a very dangerous disease, pains in the ear, connected with high fever, and if neither pus escaped from the ear nor blood from the nose, the death of the patient usually occurred from the ninth to the eleventh day.

This was probably the disease that we now name acute catarrh of the middle ear, and the great medical philosopher was certainly right in calling it a serious one.

Among all the improper remedies which Hippocrates recommends to be dropped into the ear, there is one good one, although it is very simple, which is often thought to be a suggestion of our own day; that is, the instillation of warm water, which the great physician advises to be done by means of a sponge. If this simple, but often efficacious, treatment were universally practised in cases of acute inflammation of the outer and middle ear, it would alleviate a great deal of suffering.

Hippocrates seems to have had an eye to the effect upon the patient's mind, to use no harsher term, if we may believe that the following passage was not, as Lincke insinuates, interpolated:† "If any person has a pain in his ear, the physician should roll a bit of wool about his finger, and then pour some warm oil into the ear, and then taking the wool in the hollow of his hand, and hold it before the ear, in order to make the patient believe that it has come out of it. In order that the deception may be complete, the wool should be at once thrown into the fire."

* Herodotus, translated by Cary. Enterpe, p. 125.
† Lincke's Handbuch, Bd. II. p. 5.

Digitized by Google

Asclepiades, a friend of Cicero, recommended instillations for the ear, of oil, in which three or four cockroaches or an African snail were cooked, while a piece of henbane in oil of roses, or woman's milk, is to be afterwards added.

B.C. 44, A.D. 19] *Celsus* (Aulus Cornelius) also used a composite remedy which was said to be of service in all kinds of diseases of the ear. It was made of cinnamon, cassia, blossoms of bulrushes, castoreum, white pepper, ammonia, myrrh and saffron, as well as of various other agents. These substances were all rubbed up with vinegar, and diluted with the same agent when used.

Celsus, in his treatise *De Medicina*, spoke in some detail of aural disease. He was perhaps the first to recommend vigorous injections of water in order to remove foreign bodies from the ear, although this proper recommendation carries less weight than it would have done, had it not been mingled with a great deal of bad advice, which shows that a disposition to use the simplest means for a desired end is not always connected with great learning. Celsus recommends in obstinate cases of a foreign body in the ear, that the patient should be laid upon a table, and upon the side of the affected ear, when the surgeon strikes with a hammer upon the table, in order to dislodge the foreign body by the concussion.

Among the mass of writers mentioned by Lincke as being before Galen's time, *Archigenes* seems to have had some correct notions. He practised venesection for severe pain in the ear, and employed purgative enemas, warm baths to the ear, especially by means of a sponge dipped in hot water. He warns against the use of cold water. He also has his method of removing a foreign body from the ear, and recommends a vigorous shaking of the affected head. A child is to be seized by the feet and well shaken, while adults are to be held very much as Celsus proposed; that is, they are to be laid on a table, while the leaf of it nearest the head is to be repeatedly opened and shut with a slam. *Archigenes*, like other ancient authorities, however, thinks very much of instillations of various kinds for the relief of the different forms of deafness. He recommends speaking-tubes to the deaf.

A.D. 130–201] *Galen* recognized the importance of the ear, inasmuch as it lies so close to the head. Although his classifications of disease are very minute, we do not seem to learn much from his writings, except the value of agents that will excite the secretions of the nose and mouth, which he recommends in aural

Digitized by Google

disease. He complains of the empirical practices of his predecessors in ordering now cold and now warm agents, now sweet and now sour ones.

He also tells of a poor patient of some less learned or less practical man than himself, who, in accordance with advice, used black pepper as a local means of treatment for an inflamed ear, and whose sufferings were so much augmented, that he came near hanging himself.

Galen objects to the common use of opium, which seems to have been employed very much in relieving the pain of aural disease.

Tinnitus aurium, according to Galen, was due in some cases to exhalations from the stomach, and in others to increased sensitiveness of the ears. Both of these causes certainly leave much to be wished for, in the way of exact knowledge, as to the nature of this distressing symptom.

It would be tedious in the extreme to follow Galen through his classification of diseases of the ear, and remedies for them. Like his predecessors and contemporaries, he was not willing to admit that there were some diseases for which remedies were useless, so far as their knowledge went. The aural prescriptions of the ancients may well be compared to the mitrailleuse, dangerous far and wide.

Cœlius Aurelianus, a successor of Galen, stands out prominently from the absurd theorizers of his time, in his clear delineations of pain in the ear, and his sensible remedies for it—leeches, cups, poultices, mustard plasters, and so on.

Apollonius, quoted by Galen, took out foreign bodies with ear-spoons, forceps, hooks, etc., which were enveloped in wool and dipped in turpentine. He softened ear-wax with saltpetre in vinegar, and then removed it with lukewarm water or oil.

About this time we read of the materia medica of *Marcellus*, who gives us a glimpse of the popular remedies of the day. Frogs' fat is recommended for pain in the ear; the urine of pigs, of children and men, and the blood of young chickens, for an ulcer in the ear; for worms in the organ, the saliva of a hungry man, and so on.

We see a great deal in the ancient literature of worms in the ear; so that we must conclude that they were much more commonly found in the olden time than with us. This was probably due to the fact that cases of neglected suppuration were very frequent, and that living larvæ were thus often developed.

600 A. D.] The famous surgeon and obstetrician, *Paulus Æginita*, who flourished in the seventh century, should be remem-

Digitized by Google

bered as a contributor to the surgery of otology. He expended much energy on the subject of foreign bodies in the ear, a field which has unfortunately always suffered from surgeons over anxious for operations. He suggests a method for their removal, which, when all other means fail, is still to be thought of in our day. It is an incision behind the ear, to detach the auricle from the canal. We are thus enabled to get at a foreign body very readily. Hippocrates is said to have also recommended this procedure.

According to Lincke, the Arabians got their knowledge of otology, whatever it was, from the Greeks, of whom Galen was the chief authority; so that we can only add a few more absurd remedies as their contribution to knowledge; for deafness, the brain of a lion mixed with oil (the brain, not the lion,) is advised by *Rhazes*. *Serapion* advises instillation of woman's milk for the cure of earache in children; and he gives the important caution that if it be a boy who is affected, the milk must be that of a woman who is nursing a female infant.

As we have seen, in noticing the progress in our knowledge of the anatomy of the ear, the centuries from Galen to Valsalva were dark ages for our science. Lincke says: "Otology remained at the same point at which the Grecian, Roman and Arabian physicians had left it." In Lincke's own list of the progress of these centuries we find traces of ignorance and empiricism only. One author named *Gadesden* recommends that, in cases of inflammation of the ear, one of the lower classes be hired to suck out, by means of a tube placed in the meatus externus, all the morbid material of the ear; and this is said to be a cure for all kinds of deafness, not even excepting that from a purulent affection of the organ. Lincke believes that *Peter de la Cerlata* was the first to use a speculum for widening the auditory canal for purposes of inspection.*

1560] *Johannes Arcularius* gave some sensible rules for the management of aural disease. He declaimed, for instance, against the indiscriminate practice of stuffing the ear with cotton; but he advised an extremely peculiar means of extracting a foreign body from the ear. The head of a lizard was to be cut off, placed in the affected ear, and allowed to remain there for three hours. The animal is then to be removed, when the foreign body will be found in its mouth.

1560] *Alexander Benedetti* recommends, as a remedy for pain in the ear, the semen of a boar, which is to be carefully taken

*The passage quoted to sustain this view is "*per inspectionem ad solem trahendo aurem et ampliando cum speculo aut alio instrumento.*"

Digitized by Google

from the vagina of a sow before she has dropped it upon the ground. This, however, is the suggestion of a writer on general medicine, and not on otology.

1523–1562] *Gabriel Fallopius*, in this century, seems to be entitled to the honor of having first taught that a discharge of pus from the ear of a child should not be meddled with; for as Fallopius gravely taught, and as has been gravely repeated by his legitimate successors for two hundred and seventy-three years, this discharge of pus is an effort of nature to throw morbid material out of the head through the ear. The otorrhœa of adults, according to Fallopius, is also a discharge from the brain, and should not be treated by astringents, but with mild, cleansing remedies. He used an aural speculum, and employed sulphuric acid to remove polypi.

1600] In the seventeenth century we hear of *De Vigo*, body surgeon to Pope Julius II., curing his Holiness of a very obstinate abscess of the right ear, by means of a mixture, or liniment, of ʒ ij of oil of eggs with ʒ iij of oil of roses. What kind of an abscess this was, or where it was situated, *Lincke* does not tell us.

In the latter half of the sixteenth century a certain *Capivacci* seems to have deviated a little from the errors of his predecessors. He speaks with more precision of aural disease. He describes thickening, ulcers, and cicatrices of the membrana tympani, and says that deafness which arises from an affection of the nerve or labyrinth is incurable—a declaration in which his successors, three hundred years after him, are forced to unite. Capivacci also describes a method of making a differential diagnosis between the diseases of the peripheric and of the central parts of the organ of hearing. One end of an iron rod, an ell in length, is put between the teeth of the patient, while the other is placed upon a keyed musical instrument. If he could distinguish the tones produced by the vibrations of the keys of the instrument, his deafness depended upon some lesion of the membrana tympani; if not, it was an affection of the nerve. Here we see glimpses of deduction from the anatomical knowledge of the time.

Peter Forest, who must have been an Englishman, judging from his name, but who practised in Rome in this century, to whose works Lincke gives no definite reference, collected fifteen cases of aural disease that seemed to have been carefully observed. One is a case of disease of the ear, ending in an affection of the brain and death. He speaks of pain in the ear caused by the rays of the sun,

Digitized by Google

and he tells a wonderful story of a female deaf for seven years—so deaf that she could not hear a clock strike—who, being advised by that character so common in medical scenes, an old woman, to put some musk in her ear, did so, and was cured. He also tells how his teacher, *Gisbert Horst*, the director of a hospital in Rome, used to heal deafness with water that was distilled over a young mouse having no hair.

We trace one of the delusions that still lingers among us—namely, that the hearing is completely destroyed when the membrana tympani is broken—to a writer named *Hercules Sassonia*, who lived in this century. He also had the peculiar notion that patients always spoke in a low tone when the disease of the ear was seated in the auditory nerve, because the nerve supplying the tongue, a branch of the fifth, was at the same time affected. In deafness arising from venereal disease, blisters behind the ear and a mixture of oil of guaiacum and hydrochloric acid, as a local application, of which the patient drank a little, were highly spoken of.

1510–1590] The great Frenchman, the father of modern surgery, *Ambrosius Paré*, figures in otological history as the first one to employ a syringe for cleansing the ear.

1597] *Caspar Tagliacottzi*, of Bologna, who did so much for plastic surgery, did not neglect the ear, but attempted to restore the auricle by taking integument from the adjacent skin. He relates one case of a Benedictine Monk, where he had done this with success.

1690] Although the aural speculum had been used a hundred years before, we find a certain *Johann Hartman* very unwilling to use it; for he seems to advise the detection of inspissated cerumen by the following simple method: He placed a curved silver tube into the ear, and blew through it. If the patient felt the breath to be cold, the deafness did not proceed from impaction of wax. In our day the detail of this method is sometimes simplified without altering the principle; that is to say, a probe is used to *see* if wax is in the ear. Through all this century, the seventeenth, there are numerous volumes on the treatment of the ear, but they all tread through the barren waste of drops and decoctions, theories, nomenclatures and rank empiricism.

Lusitanus gives an amusing explanation of the practice of cutting off the ears of thieves. He said that such treatment rendered them incapable of propagating their kind, and hence no more thieves could be born of them. He founded this opinion on the statement

Digitized by Google

of Hippocrates that the division of the veins behind the ear rendered a man sterile, because the semen, which was generated in the brain, could no longer pass down to the genitals.

Johann Baptista van Helmont, evidently a Belgian, casts away the theory that had so long prevailed, of deafness being caused by ascending exhalations, and clears up the whole matter by ascribing it to the work of the devil, or other evil spirits.

1640] *Marcus Banze* gives us the first idea of an artificial membrana tympani, by proposing to place a tube of ivory in the auditory canal, the end of which is covered by a bit of pig's bladder, as a protection to the exposed ear, when the membrana tympani was lost by ulceration.

1646] The renowned surgeon, *Fabricius* of *Hilden*, or *Fabricius Hildanus*, so called to distinguish him from *Fabricius* of *Acquapendente*, contributed somewhat to the surgery of the ear. He invented an instrument for extracting foreign bodies from the ear, as indeed every surgeon of eminence seems to have thought it his duty to do. He also wrote of the removal of aural polypi.

In the latter half of the seventeenth century, *Thomas Willis* attempted to prove, by experiments on animals, that total deafness does not ensue when the membrana tympani is destroyed. He also made some interesting observations on deaf persons who only heard in the midst of a noise. Von Tröltsch quotes one of these cases in his text-book,* that of a woman who could only hear her husband when a servant was beating a drum. The conversations in that family were probably not very protracted. This kind of impairment of hearing, which was called *paracusis Willisiana*, was referred by its describer to a relaxation of the membrana tympani, the normal tension being restored by the noise, or vibrations of the atmosphere.

1683] *Du Verney*, known by his labors in the anatomy of the organ, and his work on the diseases of the ear, contributed very little to sound knowledge, although he made an attempt to arrange the diseases in accordance with the anatomy. He, however, disputed the generally accepted opinion that a discharge of pus from the ear came from the brain, and showed that the meatus auditorius internus was closed by the auditory nerve, and that the pus must pass through the cochlea and the fenestra ovalis rotunda, before it could get into the external auditory canal.

Du Verney modified Hippocrates' suggestion to get at a foreign

* Diseases of the Ear, American translation, 3d edition, p. 256.

Digitized by Google

body not otherwise easily removed, by making an opening behind the ear, and recommended that the incision be made upon the upper side, because the vessels are smaller in this position. He thus anticipates Von Tröltsch, who made the same modification of the original suggestion nearly two hundred years later.*

We still continue, in the works upon the ear that appear in this century, to hear much of worms or living larvæ in the ear—a state of things, however common among the ancients, that is now very rare, because suppurating ears are usually cleansed. The disgusting and magical ear-drops of the early and dark ages are still used in this latter part of the seventeenth century. Thus one writer records that a Capuchin monk mixed the urine of a female donkey, that had brought forth but once, with that of a male hare, of a wolf, or in case of the absence of the latter, of an entirely white goat, warmed it, and adding a little oil of caraway, used it as drops for the ear. Urine of the various animals figures largely among the ear-drops of the period. *Paullini*, one of the writers of the day, is in doubt, however, whether it is proper that women should use the renal secretion of dogs as a remedy for deafness.

We begin to hear more, in the latter part of the seventeenth century, of the education of the deaf and dumb, but it is mingled with much that is absurd in attempts at treatment. The great error was then made, as it often is now, of supposing that the diseases of the ear which produced deaf muteism were of a different nature from those which in the adult caused deafness only.

John Wallis, an Englishman, was perhaps the first to instruct a deaf mute to speak, which he did, and that very well. The case was one of acquired deaf muteism, the patient having lost his hearing at eight years of age; but he became able to read the Bible aloud, and to converse with some fluency.

Lincke begins his account of the progress of otology in the eighteenth century with the lament that it did not keep pace with the anatomical investigations of the organ, which had been brought to such a high point by the labors of Valsalva, Cassebohm, Cotugno and Scarpa, and he says that otology would have advanced very much faster had Antoine Marie Valsalva devoted himself more to its prosecution.

But Valsalva did much to give us correct notions in regard to the diseases of the ear. He adduced cases where the membrana tympani had been restored. He showed that the hearing power is

* Diseases of the Ear, American translation, p. 488.

Digitized by Google

nearly impaired, not lost, by a perforation of the membrana tympani. He recognized anchylosis of the base of the stapes as a cause of deafness. He gave us the Valsalvian experiment, the mode of forcing air through the Eustachian tube by a forced expiration with the mouth and nostrils closed, and he advises it as the best means of cleansing the middle ear from pus. He proved that the cavity of the tympanum is connected to the cells of the mastoid process, by a case in which he injected the former through a fistulous opening in the latter.* He also showed that stoppage of the Eustachian tube is often a cause of deafness. This is certainly a refreshing catalogue, after we have been wading through the disgusting empiricism of the centuries before.

Valsalva's century is, however, also cursed with theoretic treatises, on aural disease, such as that of one Frederich Hoffman, who goes on, in the good old way, with instillations of wonderfully compounded ear-drops. Lincke mentions numerous inaugural dissertations of this time, but they relate chiefly to cases that were not properly understood by the reporters of them; and these authors, as well as their theses, are deservedly forgotten.

1774] *J. L. Petit*, in a work upon surgical diseases, reports many interesting cases of caries of the temporal bone. In one case of suppuration in the ear, with caries of the mastoid, he advised that this part should be cut down upon and trepanned. His advice was not followed, and the patient died. He also relates cases where this operation was successfully performed, and he must therefore be considered as the originator of this valuable procedure.

1735] We then come to the famous portmaster of Versailles, *Guyot*, who first injected the Eustachian tube. His own hearing was impaired, and in order to relieve it he introduced an angular tube of tin through the mouth, opposite (gegen), not into, the Eustachian tube. The distal extremity of this instrument was attached to a leather tube. This was connected to the reservoir of two small pumps, which were moved by two cranks and a wheel fastened in machinery, by means of which he forced fluid through a curved pewter tube, placed behind the uvula, into, or about, the mouth of his Eustachian tube, and removed the impairment of hearing.

1735] *Beck*,† who quotes from the history de l'Acad. des Sciences, thinks Guyot washed out the mouth of Eustachian tube. We

* As I have shown elsewhere, this case was for a long time supposed to be one of perforation of the mastoid.

† Die Krankheiten des Gehoerorganes, 1827, p. 21.

Digitized by Google

now know that the procedure alone is a very valuable one. I regret very much that I cannot get access to Guyot's original report to the French academy.

About fifteen years later, Archibald Cleland, an English physician, revised the operation of catheterization of the Eustachian tube, and introduced a tube, through the nose, which was a much more practicable method than that of Guyot. His contemporaries seem to have paid little attention to his suggestions, for *Van Swieten* recommends catheterization of the tube, through the mouth, as a possible operation. Wilde attempts to claim the use of the catheter as a British discovery. He makes Guyot a mere suggester of the operation of catheterization, but, I think, the evidence is in favor of the French portmaster.

1755] *Jonathan Watham*, an English author, reported cases of restoration of hearing by means of catheterization of the tube through the nose. This paper is in the Philosophical Transactions of the Royal Society. He seems not to have known of Cleland's labors in the same direction.

Archibald Cleland still farther advanced the science of otology by introducing a three-inch convex lens, with a handle, as a means of examining the ear. The ear was illuminated by a wax-light attached to the lens.

1748] *Julian Busson* proposed, in rather an undecided way, to perforate the membrana tympani, in order to remove collections of pus from behind it; but, as this was a very dangerous operation, he advised the inhalation of vapors through the mouth and nose, and then that they be forced into the Eustachian tube by means of Valsalva's method, as he thought that the pus might thus be driven out of the middle ear.

The surgeons, after the seemingly complete failure of physicians to successfully treat diseases of the ear, animated by the invention of the Eustachian catheter and Petit's operation for perforation of the mastoid, seem to have been exceedingly active in otology during the latter half of the eighteenth century. *Antoine Petit*, as well as *Cleland*, recommended the use of an instrument through the nose instead of through the mouth, as proposed by Guyot, and injections through the tube are everywhere recommended in their writings.

The successful cases which were reported about this time were usually among young persons. The reason that the Eustachian catheter fell into such disrepute can be found in the fact that it was used in chronic cases, in which the prognosis should have been pro-

Digitized by Google

nounced bad or hopeless from the beginning, and a natural disappointment occurred from the want of success.

One very careful soul who seems to have been in great horror of the operation, proposed that patients upon whom the catheter was to be used, should have the hairs of the nostrils removed, and a day before the operation that lukewarm milk, or a linseed-meal mixture, or the like, should be drawn into the nostrils, so as to make the parts more pliable.

1792] The operation of perforation or trephining the mastoid process fell into great disrepute because a Danish surgeon, *Berger*, caused it to be performed upon himself, and very improperly, for "deafness which had been years in occurring, and which was accompanied by vertigo, headache, and noise in both ears." Meningitis resulted, and the patient died in a few days. This put a stop to the performance of this very useful and necessary operation, until it was lately revived, chiefly by German and American surgeons.

1800] *Everard Home*,* by his writings, suggested to Sir Astley Cooper the operation of perforation of the membrana tympani, which the great English surgeon performed successfully in four cases.

John Cunningham Saunders† wrote a work on the ear, its anatomy and diseases, which went through several editions in England, and one in America.

The history of the rise and fall, and revival of this operation will be found in the chapter on chronic non-suppuration of the middle ear, in the author's treatise of which this paper now forms the introductory chapter.

It is a brief, but scientific treatise, and far beyond its predecessors. It is characterized by simplicity, and is without the absurdities of the older text-books. It is deficient in descriptions of the methods of examining the drum-head, and teaches the erroneous doctrine that it is proper to probe a membrana tympani to see if it be intact.

It should be remembered that Saunders advised paracentesis of the membrana tympani in cases of acute suppuration of the tympanum‡—an operation that was revived by Schwartze a few years ago.

He says: "But let it be admitted that the tympanum has suppurated, ought the membrana tympani to be abandoned to a casual

* Philosophical Transactions, 1800.
† The Anatomy of the Human Ear, &c. Edited by Wm. Price, M.D., Philadelphia, 1827.
‡ Ibid., p. 59.

Digitized by Google

ulceration, or is it better to open it by art? I am inclined to prefer the latter, and if I can be assured, by any symptom, that suppuration has taken place, I should not hesitate to make a small perforation of the membrana tympani, and to repeat it, if necessary, taking, at the same time, every precaution to suppress the fresh collection of matter."

Saunders speaks wisely against the objections made to checking a purulent discharge from the ears, and shows that disease of the brain is very apt to follow a neglected chronic suppuration, and he gives some interesting illustrative cases.

The book is very deficient in its treatment of the Eustachian tube. Thus early do we find, in spite of Cleland's and Wathan's teachings, the English prejudice against the use of the catheter, which has only lately been overcome.

1817] *J. H. Curtis* also published a book on the ear,* but it added nothing to our knowledge, being a feeble imitation of the work of Saunders.

1819] *J. A. Saissy*, of Lyons, devoted the last twelve years of his life to the study of aural disease. He published a work on the ear, which attained the honor of a place in the "Dictionnaire des Sciences Médicales." This work was translated into English by Nathan R. Smith, the celebrated American surgeon.†

1821] *I. M. G. Itard*, Physician to the Royal Deaf and Dumb Institution in Paris, also publishes a treatise, which was translated into German,‡ and which did much in the pioneer work of clearing up the undergrowth of centuries of neglect.

Then followed *Deleau*, on the diseases of the middle ear and on perforation of the membrana tympani, an operation for which he claimed more than it deserved.

1827] *Karl Joseph Beck*, of Freiburg, published a Handbook of the Diseases of the Ear.§ It is a succinct and carefully written compendium of what was then known in this department of science, and has a very good bibliography, with the exception of the fact that the names of English authors are very often misspelled.

1833] *Wilhelm Kramer*, of Berlin, an author who still lives in a vigorous old age, brought out a work which was animated

* A Treatise on the Physiology and Diseases of the Ear, by John Harrison Curtis, Esq. 3d Edition. London, 1823.

† An Essay on the Diseases of the Internal Ear. Baltimore, 1829.

‡ Die Krankheiten des Ohres und des Gehors.

§ Die Krankheiten des Gehoerorganes. Heidelberg und Leipzig.

Digitized by Google

by the true scientific spirit, and which greatly simplified the practice of otology. He has since then published a number of volumes.

He introduced a valvular-handled speculum, that was an improvement upon the very clumsy ones hitherto in use. He also gave us the air-press, by which air or vapors could be introduced through the Eustachian tube into the middle ear.

In speaking of the practices of his predecessors, the intolerance of Kramer's spirit is seen—an intolerance which is painfully manifest in his later works.* In 1860 he speaks of the writings of Hinton of London—a writer whom, I am sure, all my hearers respect, "as in every respect unimportant," while Toynbee's pathological investigations, to which science is so much indebted, are actually treated with sneers. In 1865 Kramer published a monograph,† which is essentially a review in a very unfriendly spirit of the labors of Toynbee, Wilde, Von Tröltsch, Erhard, Voltolini, and others, of whose writings I shall soon speak. What good work Dr. Kramer actually did for otology in his younger days has been overshadowed by his subsequent writings. In spite of what I am almost inclined to call common sense, he still persists in rejecting the modern method of investigation, as well as the results of examinations of ears removed from persons who have been deaf. He still continues to use the handled bi-valved speculum, with sunlight as the only source of illumination, and on cloudy days sends away patients without examination; and because Toynbee made post-mortem examinations of many ears of persons whom he had not seen during life, Kramer rejects all pathological investigations, except experiments conducted upon a dead body or a glass model. He speaks of Politzer's method of inflating the middle ear, "as a miserable resort in cases of necessity, the employment of which, all pompous commendations to the contrary notwithstanding, stamps him who uses it with want of skill in the introduction of the catheter." Again he calls Toynbee, in his work published in 1867,‡ and this after Toynbee had lost his life in experiments as to the effect of chloroform and hydrocyanic acid, "a very poor aural surgeon." "Ein miserabler Ohren-arzt."

These are fair specimens of Dr. Kramer's style in dealing with an opponent, with any one who claims to have accomplished anything for aural pathology and therapeutics in any other way than by the

* Ohrenheilkunde der Gegenwart, 1860. Berlin, 1861.
† Ohrenkrankheiten und Ohrenartze in England und Deutschland.
‡ Handbuch der Ohrenheilkunde, p. 44. Berlin, 1867.

Digitized by Google

employment of *his* catheters, *his* bougies, and his valvular-handled speculum.

In this review of what has been done to bring otology up to its present position, I have been compelled to notice the difficulties with which the advance of the science has been obliged to contend in the way of improper and unjust criticism, from one who, in this country and England, has acquired the reputation of a safe guide and leader in this part of the field of medicine.

1841] *George Pilcher* wrote an essay on the ear which received the Fothergillian gold medal from the Medical Society of London. It is a valuable compilation. The section on foreign bodies in the meatus is full of warning interest. There is, however, very little of the author's own experience in the volume.*

In 1841, a gentleman from New York, consulted Dr. James Yearsley, of London, in regard to his deafness, who informed Dr. Y. that he was enabled to improve his hearing power, so that he could produce in his left ear a degree of hearing quite sufficient for all ordinary purposes. This was done by the introduction "of a spill of paper previously moistened with cotton to the bottom of the passage." †

This was the real discovery of the artificial membrana tympani, although Dr. Martel Frank, in his cyclopædic text-book, refers to a means of *preventing injury to the ear*, but not of improving the hearing when the membrana tympani is lost, which is the use of a silver, gold or lead tube, the inner end of which is covered by a membrane. The fact that such a means of protecting the ear was used in 1640 has been already alluded to. It cannot be said, however, to be an artificial membrana tympani in the sense of Yearsley's cotton wool, which he soon substituted for the paper of the New York patient, or of Toynbee's disk of rubber attached to a wire. The artificial membrana tympani has proved itself a very valuable means of treatment, and is in constant use by many of those who treat suppurations of the middle ear.‡

Yearsley's book, as its title indicates, "Deafness Practically Illustrated," is not to be rated with the text-books of Wilde, Toynbee, Kramer, or Frank.

The work of *Dr. Frank*,§ already alluded to, will be found a valuable work of reference, although it lacks individuality. Hoff-

* Treatise on the Structure, Economy, and Diseases of the Ear. American edition, 1843.
† On Deafness. Yearsley, p. 221.
‡ Frank, p. 293.
§ Practische Anleitung zur Erkenntniss und Behandlung der Ohrenkrankheiten. Erlanger, 1845.

Digitized by Google

man's (Tröltsch's) mode of examining the auditory canal and membrana tympani is fully described by Frank on page 49 of his book; but he attached no importance to it, not foreseeing that it was to supersede all other methods, as it has done, as improved and brought into general use by Von Tröltsch.

1843] The work of *William R. Wilde*,* surgeon to St. Mark's Hospital, which was republished in this country, where it has had a large circulation, and which was translated into German, probably did more to place our science upon a sound basis than anything that has been done in otology since the days of Valsalva. This work was founded on the observations of a careful observer, who had acquired fine habits of study as a skillful ophthalmologist. It was not, as the works of Lincke and Frank, a cyclopædia of what had been written on otology, nor was it full of absurd theories like that of Kramer, but it consisted in the application of thorough anatomical, physiological, and therapeutical knowledge to the study of an organ that had been hitherto treated as if it were *sui generis*, and not subject to the same accidents and diseases, and consequences of those diseases, as other parts made up in like manner, of integument, of cartilage, mucous membrane, periosteum, and bone. In fact, Wilde—now Sir William Wilde, in consequence of the well-earned recognition of his Queen—brought otology, or aural surgery as he called this department, down from the terra incognita of the ancients to a point where it could be investigated by the average practitioner, and where it was respected by all. He gave us the conical specula, reviving a suggestion of Dr. Newburg, of Brussels, and Ignaz Gruber of Vienna, and drove the unhandy ones of Fabricius and Kramer out of use. More than all, he taught us that the most of aural disease was dependent upon inflammation, and not upon that which was one of Kramer's pet ideas at that time, "nervous disease," whatever that may mean.

1860] Then came Toynbee's book,† which is mainly valuable for its anatomical and pathological investigations. It can never take rank with Wilde's book as a useful treatise for the practitioner, indispensable as were Toynbee's labors as an anatomist and pathologist. Mr. James Hinton's supplement has, however, materially improved Toynbee's treatise.

1861] Dr. Anton von Tröltsch, of Würzburg, published a monograph‡ upon the anatomy of the ear, in 1861, which he

* Practical Observations on Aural Surgery. London.

† The Disease of the Ear: their Nature, Diagnosis, and Treatment. Reprint, Philadelphia.

‡ Die Anatomie des Ohres. Wurzburg, 1861.

Digitized by Google

entitled a contribution to the scientific establishment of otology. It was certainly all that, and something more. While it gave a very simple and complete account of the anatomy, except that of the internal ear, there were many wise suggestions in the text with regard to the treatment of aural disease. Von Tröltsch showed himself to be what in the eyes of Kramer is a reproach, but what is, in those of the profession at large, an honorable position, a disciple of Wilde and Toynbee. He built upon the foundations which the clinical skill of the Irish, and the industrious labors of the English observer had made, and brought otology in Germany into a position which made it an inviting department of labor. His work upon the anatomy contains the results of many original investigations, which will be found in the anatomical descriptions of this volume.

1862] This work on the anatomy of the ear was soon followed by a text-book upon its diseases,* which had the same scientific characteristics with the monograph upon the anatomy. It has been translated into the English, French, and Italian languages. In this country it met with great favor, having passed through two editions, and it has given tone to all the otological literature and investigations of its day.

Von Tröltsch improved and brought into general use the method of illumination first proposed by Dr. Hoffman, of Westphalia, and thus at one step advanced the science very materially.

In 1862, the same year that Von Tröltsch issued his text-book, Dr. Adam Politzer, of Vienna, promulgated his method of injecting the middle ear with air, or of inflating the middle ear. It is hard to overestimate the value of this simple procedure, and the benefit to our science and art that its invention caused.

The writer can but quote the opinion of an eminent practitioner of this city, who, in speaking of Politzer's method, once said to him: "If a man were to take this air-bag, and travel through the country, advertising himself as an aurist, and blow up all the ears indiscriminately that were brought to him, he would be a very successful quack." Indeed, the effects of this means of treatment, especially in the case of children, or adults who have suffered but a short time from impairment of the hearing, from disease of the middle ear, are often wonderful.

1863] Dr. *Julius Erhard* published a work upon the diseases of the ear, which is a peculiar mixture of truth with error. The book is rather curious and interesting.†

* Die Krankheiten des Ohres.

† Klinische Otiatrie. Berlin.

Digitized by Google

In 1864, Dr. *von Tröltsch*, Dr. *Politzer* and Dr. *Herman Schwartze*, of Halle, issued the first number of the Archiv für Ohrenheilkunde, a work which has been regularly continued under their management, and which has formed a true guide to the otological student and practitioner.

In 1865, Dr., now Professor, Politzer published a monograph upon the membrana tympani, which was translated into English, and published in the United States, by my friends and colleagues Drs. Arthur Mathewson and Homer P. Newton, of Brooklyn. The frequent use which every recent writer on otology is obliged to make of this valuable monograph, is sufficient evidence of its merit.

In October, 1867, the first number of the Monatsschrift für Ohrenheilkunde was issued, under the direction of Dr. *Voltolini*, of Breslau, Dr. *Josef Gruber*, of Vienna, Dr. *F. E. Weber*, of Berlin, and Dr. *N. Rüdinger*, of Munich. All of these editors have contributed very much to the scientific advance of otology, while Dr. Rüdinger has probably done more than any anatomist of his day to elucidate the anatomy of the Eustachian tube. His photographic atlas of the ear is a work of permanent value, and one of which the author has made frequent use in illustrating some of the chapters of this work.

1866] Dr. *S. Moos*,* of Heidelberg, issued a practical treatise on aural disease in 1866, and Dr. *Gruber*,† of Vienna, one in 1870. Both of these volumes show much original research, and are worthy of an English translation, which would bring them before a much larger circle of readers.

The American Otological Society was established in 1868, and has held annual meetings since, and has published four volumes of Transactions. To these papers the author has had frequent occasion to refer in the preparation of the following chapters, and it is believed that they furnish evidence of the high character of the work that has been done by American otologists.

No outline of what has been done in the last twenty years for otology would be complete without a reference to the writings of Professor Edward H. Clarke, of Harvard University. Dr. Clarke published a paper on perforation of the membrana tympani,‡ its causes and treatment, which was probably the best that had been written on this subject. It received a full recognition among foreign authorities. In this article is contained a very important sen-

* Klinik der Ohrenkrankheiten.

† Lehrbuch der Ohrenheilkunde.

‡ American Journal of the Medical Sciences, January, 1858.

Digitized by Google

tence, quoted by Von Tröltsch in his text-book, a passage full of meaning and warning: "*So necessary is a careful attention to the ear, during the course of an acute exanthema, that every physician who treats such a case without careful attention to the organ of hearing, must be denominated an unscrupulous practitioner.*"

Dr. Clarke has also published a monograph upon polypus of the ear, which contains very much of value as to the nature and treatment of these products of inflammation.*

In 1869, Drs. *H. Knapp*, of New York, and *S. Moos*, of Heidelberg, began the publication of the Archives of Ophthalmology and Otology, which are issued simultaneously in English and German, and which have added much to the scientific interest in otology. The union of the two branches of science in so valuable a journal has certainly assisted to gain the respect of the profession for the department of otology.

Dr. *Lawrence Turnbull* issued a treatise on the ear in 1872, which more than any other book as yet published exhibits the work done in otology on this side of the Atlantic.

Lincke, writing in 1840, regrets that in Germany no clinique for the treatment of aural patients had as yet been organized. Dr. *Reiner*, he says, had attempted to do so in Munich, but had failed, as had Dr. Lincke in Leipsic; and we know that Saunders and Cooper had failed in establishing one in London; for, in 1804, Saunders had an eye and ear infirmary in London, under the name of the "New London Dispensary for Curing Diseases of the Eye and Ear." But the aural part was so unsuccessful, that it became necessary to close it to the aural practice. John Harrison Curtis, in 1816, was more successful, and, when Lincke wrote, his dispensary was still carried on. In 1828 the New York Eye and Ear Infirmary, which had been in existence eight years, treated 91 cases of diseases of the ear, to 925 of diseases of the eye. That institution, according to its last published report, treated more than 2,000 aural cases, while every large city of Europe and America now enjoys the benefits of institutions where aural diseases are properly and specially treated.

The striking want of success in the treatment of aural disease was due to the fact, that as yet no simple means had been found for examining the membrana tympani and auditory canal. Besides this, the pharynx was not recognized as the point of origin of the most of aural diseases, and there was not a simple means of opening and

* Observations on the Nature and Treatment of Polypus of the Ear. Boston, 1867.

Digitized by Google

treating the Eustachian tube. All these difficulties have been removed in the nineteenth century, and in many details of treatment great advances have been made, which render the care of aural disease quite as satisfactory as that of any other of human ills. This is not altogether due to the fact that so many new truths have been discovered, but much of the gratifying change has resulted from the sweeping away of the webs of error. In concluding this introductory chapter, the author begs that the reader will bear in mind that he has not attempted to make it more than an outline of what has been done in otology from the earliest times until our own day. I have attempted to sketch only that which has left its traces upon the science, and which has contributed materially to its progress.

AUTHORITIES CONSULTED IN PREPARING THE PRECEDING HISTORICAL SKETCH.

NOTE.—For the convenience of the reader who may desire to consult the original authorities, which the author has examined in preparing the preceding sketch, their complete titles are here given. The bibliography will, however, be seen to refer only to the works actually examined, and not to those mentioned as quoted by the authorities.

Archiv für Ohrenheilkunde. Herausgegeben von A. von Tröltsch, A. Politzer, und H. Schwartze. Würzburg. Bd. 1–6.

Archives of Ophthalmology and Otology. Edited and published simultaneously in English and German, by Prof. H. Knapp, M.D., in New York, and Prof. S. Moos, M.D., in Heidelberg. Volumes I. to III. New York: William Wood & Co. Carlsruhe: Chr. F. R. Mullersche Hof-Buchhandlung, 1869–1872.

Allen, Peter. Lectures on Aural Catarrh. J. & A. Churchill, London, 1871.

Beck, Karl Joseph. Die Krankheiten des Gehoerorganes. Heidelberg und Leipzig, 1827.

Biographie Medical. Tom. I–VII. Paris: C. L. F. Panckoncke.

Clarke, Edward H. American Journal of the Medical Sciences, Jan. 1858.

Clarke, Edward H. Observations on the Nature and Treatment of Polypus of the Ear. Boston, 1867.

Curtis, John Harrison. A Treatise on the Physiology and Diseases of the Ear. Third edition. London and Edinburgh, 1823.

Cyclopedia of Anatomy and Physiology. London, 1839. Longman Brown. Green and Longman. Article, "The Organ of Hearing."

Dunglison, Robley. History of Medicine, from the earliest ages to the commencement of the nineteenth century. Philadelphia: Lindsay and Blackiston, 1872.

Encyclopedia. Chambers. J. B. Lippincott & Co. Philadelphia, 1872.

Erhard, Julius. Klinische Otiatrie. A. Hirschwald. Berlin, 1863.

Fabricius of Acquapendente. Opera Omnia. Anatomica et Physiologica. Lugduni Batavorum, 1738.

Frank, Martell. Praktische Einleitung der Erkenntniss und Behandlung der Ohrenkrankheiten. Erlangen, 1845.

Gruber, Josef. Lehrbuch der Ohrenheilkunde. Wien, 1870.

Henle, J. Handbuch der Menschen. Bd. II. Braunschweig, 1866.

Digitized by Google

Herodtus. A new and literal version from the text of Baehr. By Henry Cary, M.A. London: Henry G. Bohn, 1854.

Itard, J. M. G. Die Krankheiten des Ohres und des Gehörs. Aus dem Französischen. Weimar, 1822.

Jones, T. Wharton. The Organ of Hearing, in Cyclopedia of Anatomy and Physiology. London, 1839. Vol. II.

Lincke, Carl Gustav. Handbuch der Thoretischen und Praktischen Ohrenheilkunde. Bd. I–II. Leipzig, 1837–1840.

Kramer, W. Der Ohrenheilkunde der Gegenwart (1860). Berlin, 1861.

Kramer, W. The Aural Surgery of the Present Day. Translated by Henry Power. New Sydenham Society. London, 1863.

Kramer, W. Handbuch der Ohrenheilkunde. Berlin, 1867.

Kramer, W. Ohrenkrankheiten und Ohrenärzte in Deutschland und England. Ein Nachtrag zur Ohrenheilkunde der Gegenwart. Berlin, 1865.

Kramer, W. Die "exakten" deutschen Ohrenaerzte. Berlin, 1871.

Monatschrift für Ohrenheilkunde. Bd. I. VI.

Monro, Alexander. Three Treatises on the Brain, the Eye and the Ear. Edinburgh, 1797.

Moos, S. Klinik der Ohrenkrankheiten. Wien: W. Branmüller, 1866.

Politzer, Adam. Die Beleuchtungsbilder des Trommelfells in Gesunden und Kranken Zustande. Wien, 1865. Wilhelm Branmüller.

Politzer, Adam. The Membrana Tympani in Health and Disease, etc. With Supplement. Translated by A. Mathewson, M.D., and H. G. Newton, M.D. New York: William Wood & Co., 1869.

Saissy, J. A., M.D. An Essay on the Diseases of the Internal Ear. Translated from the French by Nathan R. Smith, M.D. With a Supplement on Diseases of the External Ear by the Translator. Baltimore, 1829.

Saunders, John Cunningham. The Anatomy of the Human Ear, illustrated by a series of Engravings of the natural size, with a treatise on the Diseases of that Organ, the causes of Deafness, and their proper treatment. First American, from the second London edition. With notes and additions by Wm. Price, M.D. Philadelphia: Benjamin Warner, 1821.

Schwartze, H. Die Wissenschaftliche Entwicklung der Ohrenheilkunde, Archiv für Ohrenheilkunde, Bd. I.

Shrapnell, Henry Jones. On the Form and Structure of the Membrana Tympani, p. 120; on the Function of the Membrana Tympani, p. 282; on the Nerves of the Ear, p. 505; the *London Medical Gazette,* Vol. X., April 7, 1832, to September 29, 1832. London, 1832.

Soemmering, Sam. Thom. Icones organi-auditus-humani. Frankfort a. M., 1806.

Stricker, S. Handbuch der Lehre den Geweben, des Menschen und des Thieres. Leipzig, 1869–1871.

Stricker, S. A Manual of Histology. Translated by Henry Power and others. American translation. Edited by Albert H. Buck. New York, 1872.

Transactions, Philosophical, of the Royal Society of London. For the years 1800, 1801.

Transactions of the American Otological Society. New York. Vol. I.–III.

Toynbee, Joseph. A Descriptive Catalogue of Preparations illustrative of the Diseases of the Ear, in the Museum of Joseph Toynbee, F.R.S. London, 1857.

Digitized by Google

Toynbee, Joseph, The Diseases of the Ear, their Nature, Diagnosis and Treatment. (Reprint.) Philadelphia, 1860.

Toynbee, Joseph. The same, with a Supplement by James Hinton. London, 1871.

Turnbull, Lawrence. A Clinical Manual of the Diseases of the Ear. Philadelphia: J. B. Lippincott & Co.. 1872.

Von Tröltsch, Anton. Die Anatomie des Ohres, in ihrer Anwendung auf dem Praxis. Würzburg, 1861.

Von Tröltsch, Anton. Die Krankheiten des Ohres. Ihre Erkenntniss und Behandlung. Würzburg, 1862.
The same, 4 Aufgabe.

Von Tröltsch, Anton. The Diseases of the Ear, their Diagnosis and Treatment. Translated into English by D. B. St. John Roosa, M.D. New York: William Wood & Co., 1864.

Von Tröltsch, Anton. Treatise on the Diseases of the Ear, including the Anatomy of the Organ. Second edition, from the fourth German. Translated and edited by D. B. St. John Roosa, M.D. New York: Wm. Wood & Co., 1869.

Wilde, William R. Some Observations on the Early History of Aural Surgery, and the Nosological Arrangement of Diseases of the Ear, by Wm. R. Wilde, M.R.I.A. The Dublin Journal of Medical Science, Vol. XXV. Dublin, 1844.

Wilde, William R. Practical Observations on Aural Surgery, and the Nature and Treatment of Diseases of the Ear, by Wm. R. Wilde. London: John Churchill, 1853.

Yearsley, James. Deafness Practically Illustrated. Being an Exposition of the Nature, Causes, and Treatment of Diseases of the Ear. Sixth edition. London: John Churchill & Sons, 1863.

Digitized by Google

ARTICLE V.

Disease of Left Ovary resulting in fatal Hæmorrhage. By E. H. Bridges, M.D.

Mrs. L——, aged 39, mother of four children, has had several miscarriages; was perfectly well up to January 22, 1873.

At 6 P.M. while taking her tea, was seized with pain in left iliac fossa, which soon extended over lower part of abdomen. I reached her bedside at 6.30, half an hour after first trouble. I found her very anæmic, having the look of a woman dying of post partum hæmorrhage, pulse forty and feeble, an anxious expression, lips and tongue white and almost bloodless, restless, faint and a feeling of oppression about the chest. Said she had twice fainted. By the administration of brandy, her pulse rallied a little.

A few minutes later she said, "Doctor, I am going to have one of those bad spells again." I took her wrist and found her pulse gradually growing weaker until it disappeared entirely in the radial artery. Said she could neither see nor hear. Gave her more brandy, and she rallied again as before. As she still complained of pain in abdomen, I gave her hypodermic injection of sulphate of morphia. In a few minutes was relieved of her pain, but continued to have fainting spells about every half hour, each of which left her with less strength and a feebler but more rapid pulse until five o'clock next morning, when she died from syncope, eleven hours after first symptom. As her father was an intelligent physician, I had no difficulty in obtaining permission to examine the body, which I did nine hours after death, with the assistance of my brother and Dr. J. R. Furness. The body had the appearance of one who had died suddenly. There was no emaciation; on the contrary, it was plump and well developed. The abdomen was but slightly distended. On making first incision we found fatty tissue over abdomen, at least half an inch in thickness. On opening the cavity of the peritoneum, we found and removed from this cavity at least four quarts of bloody serum and clotted blood. These clots were most extensive in left iliac fossa, although it was distributed over the whole cavity. There was no evidence of recent inflammation anywhere. Every organ in the abdomen, with one exception, seemed perfectly healthy. That exception was in

Digitized by Google

the *left ovary*. Here I found the origin of the trouble. When *in situ*, it looked slightly enlarged and quite purple. There was a ruptured opening in its peritoneal covering, of an oval shape, its borders irregular, about four lines in length and three lines in width. On laying open the ovary, it was found to be completely disorganized, scarcely anything remaining but the connective tissue, and every part of it completely filled with extravasated blood. I could not find the mouth of the vessel from which the blood had escaped. On opening the womb I found she was pregnant, and I should judge she had been so about six weeks. When the membranes were ruptured, there escaped from this cavity a clot of blood the size of an almond. The left fallopian tube was also filled with clotted blood. The membranes were not detached from the uterus, and this organ appeared perfectly healthy. The mouth of the uterus was filled with its mucus plug, and there was no evidence of injury or a commencing abortion. I can only account for the blood being in the uterus and fallopian tubes by its passing through the tube and membrane into that cavity.

The remarkable feature of this case is, that so much disease of this ovary should exist without any other evidence of disease in the body and without producing pain or any symptom during life, until the hæmorrhage which resulted in death.

Digitized by Google

ARTICLE VI.

Report of five consecutive cases of Colles fracture, treated after the plan of Prof. E. M. Moore, M. D. By B. L. HOVEY, M. D., of Rochester, N. Y.

Case I.—Mrs. V——, aged 24, was thrown from a carriage, June 19, 1872, striking upon the palm of the right hand, fracturing the radius about one inch above the wrist joint. The patient was seen in a few minutes after the accident by myself and Dr. Hutchison, of Utica, who were driving in the same direction with the patient.

The injury was readily recognized, by the deformity, and on reduction there was a slight crepitus.

The reduction was made after the plan and manipulation of Prof. Moore, and secured by compress and adhesive plaster, and then placed in a narrow sling. There was but little pain or swelling on the sixteenth day after the injury, the patient using the hand in knitting, and on the nineteenth day the dressing was entirely removed with perfect cure.

Case II.—Frank Gauber, aged 58, fell from a tree, producing several severe injuries, among which was a fracture of the radius about three-fourths of an inch above the lower end of the bone, with a dislocation of the ulna.

The reduction was made in the same manner as the preceding one, and secured by compress and adhesive plaster. The recovery was perfect, and the dressing removed at the end of thirty-five days after the injury. On account of the restlessness of the patient the dressing was allowed to remain several days longer than would have been required under other circumstances.

Case III.—September 3, Mrs. A. P. F——, of Troy, N. Y., aged about 55, was stopping at the Clinton Hotel, in the city of Rochester, N. Y. Patient was standing on a chair, and in the act of reaching up, the chair tipped and she fell, striking upon the palm of the left hand, producing an oblique fracture of the radius about one inch from its carpal end, and a dislocation of the ulna at the wrist.

This injury was treated as the above, and on the third day after the accident the patient went to her home and received subsequent care from my friend, Dr. H. B. Whiton, of Troy.

Dr. W. writes me, under date of September 27, 1872, and says: "Your case of Colles fracture (Mrs. F——) has resulted in a perfect

Digitized by Google

cure, and this day I have removed the dressings. You will observe that the cure was perfect, and the dressings removed on the twenty-fourth day after the injury."

The doctor further says, in the letter referred to, "I was on the business committee of the State Society when Dr. Moore read his paper, and am glad to have seen this and other cases confirming his simple and beautiful treatment. I think many who have not seen such perfect cures result from other modes of treatment would be tempted to deny that there had been a fracture."

Case IV.—September 26, Mrs. W——, aged 65, received a severe blow, striking her on the posterior side of the left fore-arm, causing a transverse fracture of the radius one inch above the carpal end. The integument was not broken, but severely bruised. The evidence of fracture was deformity and crepitus.

The reduction of the bone was easily made, and secured in position by compress and adhesive plaster.

Extensive inflammation followed this injury, and up to the present time the patient has not recovered the full use of the hand, though there is no deformity of the radius or anchylosis of the wrist joint. The hand remains tender, and the finger-joints are partially stiff, though gradually improving.

Case V.—October 10, a lad, aged 13, while at play in jumping over a post, fell, striking upon the palm of the right hand, fracturing the radius near the carpal end. There was deformity, pain and mobility at the seat of injury. Treated as the preceding cases. The recovery was rapid and complete. All dressings removed on the fourteenth day after the injury.

Digitized by Google

ARTICLE VII

Three cases of Abscess and Pelvic Peritonitis from Perforation of the Appendix-Vermiformis, relieved by Operation. By R. B. BONTECOU, M.D., Troy, N. Y.

Case I.—Mr. S. D., aged about 28, medium stature, very dark complexion, weight about 110 pounds, occupation, clerk in a carpet store, consulted me December 9, 1872, on account of pain in the right iliac fossa, with deep-seated induration of some days' standing, which he supposed was a hernia produced by heavy lifting, and for which he was wearing a truss. I could not discover hernia, and requested him to go without the truss for twelve hours, and see me again, which he did, and upon further examination I found no hernia, but evidences of inflammation of the appendix-vermiformis. I directed him to go home, remain in bed, and apply leeches to the affected part, followed by poultices, prescribing anodynes to keep the pain subdued and the bowels at rest. Anodynes and poultices were continued with comfort to the patient, but day by day the area of induration was increasing; and on the 17th symptoms of general peritonitis manifesting themselves, I determined to reach the focus of the mischief, and prevent, if possible, any effusion into the general cavity of the peritoneum. Fluctuation could not be detected with certainty by the touch, but I believed in the existence of an abscess, and under ether (assisted by Dr. W. Akin) introduced deeply a good-sized needle of the aspirator, and found pus which required the exhausting syringe to draw out. Being thus assured, I made a free dissection through the abdominal walls just above, and a little internal to the anterior superior spinous process of the ilium, and about three ounces of thick pus were evacuated, with relief of all the symptoms. Patient was doing well, with every prospect of recovery, when on the third day his tongue assumed a dry, brown appearance, and evidences of typhoid fever with diarrhœa supervened, and on the 22d, five days after the operation, he was seized with sudden and agonizing pain on the side opposite to the one operated upon, and died in a few hours.

Post-mortem examination revealed an injected condition of the abdominal peritoneum, with a few flakes of lymph floating in serum and fluid feculam, and a perforation of the intestine at about the junction of the ilium with the jejunum, that portion lying in the

Digitized by Google

left lumbar region. The appendix-vermiformis was adherent to the peritoneum covering the iliacus internus muscle of the right side, and was perforated by an ulcer, which had allowed the contents of the gut to escape into the tissues between that muscle and the peritoneum. The dissection had reached that point by a liberal incision, and the general appearance about the abscess was that of recovery. Several ulcerations of the mucous membrane of the upper portion of the ilium were present, one perforating the peritoneum, which was the cause of death. But the lower portion, for three or four feet from the ilio-cæcal valve, was contracted, and normal in appearance. Recovery in this case would doubtless have taken place, had not the enteritis supervened. I may add that a small portion of the omentum was lodged in the right internal inguinal ring, and adherent there from ancient inflammation.

Case II.—Mrs. W——, medium stature, dark complexion, weight about 100 pounds, consulted me, December 20, 1872, complaining of pain in the right iliac fossa, accompanied by induration of the deep tissues, which had confined her in bed since December 10. The thigh was flexed on the pelvis, and great tenderness of the iliac region, with unmistakable signs of pelvic peritonitis existed. The area of induration, at the time I first saw her, was about three inches in diameter, and fluctuation could not with certainty be made out by the touch.

Strongly suspecting abscess, and fearing the usual result of general peritonitis if longer delayed, I determined to settle that point, and give vent to it, if one existed. Assisted by Dr. Whiton, I introduced a good-sized aspirator needle deeply into the fossa, and with the syringe brought pus. A liberal incision through the abdominal walls, above the anterior superior spinous process, gave vent to a quantity of pus, and relief to the symptoms. I injected the cavity daily with a solution of carbolic acid until the secretion of pus had nearly ceased, and the patient rapidly recovered. I desire to state that the aspirator gave certainty to the diagnosis, and assurance for a bolder use of the knife than could have been obtained by touch alone.

Case III.—Mr. J. A——, aged about 60, very dark complexion, weight about 110 pounds, was seized, March 29, 1869, with inflammation of the appendix-vermiformis, and some local peritonitis, which lasted until April 10. Recovered without abscess, under persistent use of leeches, anodynes, poultices. and absolute rest in the recumbent posture. Some lameness of the affected side continued for

Digitized by Google

weeks, but he attended to his business, as an active insurance agent, until the 22d of June following, when he was again prostrated by an attack of inflammation of the appendix-vermiformis, and, under the same treatment of absolute rest, anodynes and poultices, continued confined to his bed till July 5, when evidences of abscess warranted the use of the knife. A liberal incision along the crest of the ilium, above its anterior superior spine, gave vent to a quantity of pus. In about three weeks the patient was able to attend to his business, and has ever since remained well. Dr. Thomas B. Heimstreet kindly assisted me in this case.

I have made post-mortem examinations of about twenty cases of this disease, occurring in the practice of Dr. Brinsmade and other physicians of this city, and have seen others that were fatal, where no examination was permitted, but which were undoubtedly cases of peritonitis, from perforation of the appendix. In several of those examined, foreign bodies of some sort were found in the appendix itself or in the abscess surrounding it. In one was found a piece of oyster shell, in another a cherry stone, in others grape and apple seeds. I have seen but few cases recover, and those were treated at an *early* stage, by leeching, poulticing, and opium given in some form in decided doses, and by physiological rest to the bowels. About fifteen years ago a distinguished physician of this city became the subject of this malady (inflammation of appendix), and by the timely use of the above-mentioned remedies recovered without abscess.

At that time he requested me, should he ever again have a similar attack, with indication of perforation, to cut down to the part and give direct escape to the abscess, before it should break the slight adhesion interposed by nature between it and the general peritoneum. Not till 1869 had I an opportunity to put in practice this idea.

Dr. Willard Parker, of New York city, however, carried it into successful operation in several cases which he reported in the Medical Record, March 2, 1868. The aspirator needle is of great assistance in determining the presence of the deeply-seated abscess before it can be made certain by the touch alone, and the earlier the incision is made, the greater is the chance of escaping fatal peritonitis. Absolute rest in the recumbent position, liberal use of leeches to the part, followed by poultices (which should always be covered by oiled silk or some impermeable tissue) and physiological rest to the bowels, by the use of opium or its alkaloids in some form, are important elements in the treatment of the early stage of this disease.

Digitized by Google

ARTICLE VIII

Case of Occlusion of the Femoral Artery from Fracture of the Femur—Mortification of the leg—Amputation. By GEO. BURR, M.D., of Binghamton, N. Y.

Sept. 28, 1871. James Depew, of Vestal, Broome county, New York, aged sixty years, had his left femur fractured at the junction of its middle and lower third, by a heavy stone falling upon him while laboring in a quarry. Dr. Wm. W. Whitney, of Union, saw him soon after the accident. The limb was placed upon a double inclined plane splint; no difficulty was experienced in bringing the broken portions of the bone in apposition; loose dressings were applied.

Sept. 29. The patient was comfortable, but Dr. Whitney noticed that the foot of the injured limb was cold, and ordered it to be kept covered with hot flannel cloths.

Oct. 1. The foot was found to be still cold, and there was but little swelling of the leg. Dr. W. now suspected that the femoral artery might have been injured, and upon examination he could find no pulsation in any of the arteries below the point of injury.

Oct. 6. I was called to see the case in consultation with Dr. Whitney and Dr. Lewis of Apilaichan. The toes, foot, ankle and the lower portion of the leg were cold, having a tallowy appearance, and small vesicles upon the skin. Warmth in any form was ordered to be applied.

Oct. 7. Dr. W. notes "no change."

Oct. 10. "Gangrenous spots more marked. Took leg off splint, keeping foot in as good position as possible, with small side splints to fracture without any reference to shortening."

Oct. 12. "Gangrene still more marked. Tonics and liberal diet ordered."

Oct. 14–20. "No improvement. Line of demarcation has formed about middle of the leg, in the vicinity of which patient complains of some pain. Stimulants ordered."

Oct. 25. I again visited the patient. At the point of fracture a large callus had formed, and the femur was evidently undergoing the process of uniting. Above this the pulsations of the femoral artery could be distinctly felt, while below no signs of arterial circulation could be distinguished. The entire lower portion of the

Digitized by Google

extremity was cold, shriveled, and without life. An irregular zig-zag line of demarcation between the living and the dead parts surrounded the leg about midway between the ankle and knee, and which, on the posterior aspect, extended downward toward the heel.

Amputation below the knee was determined upon, and immediately performed by Dr. Whitney. A large posterior flap was made with the intention of covering with it the stump. On separating the flap it was found that the gastrocnemius and soleus muscles, as well as the sub-cutaneous and inter-muscular connective tissues were in a state of decomposition, while the skin retained warmth and life. The dead portions of the flap were sliced away with the knife, and the sound skin brought forward. There was no bleeding from any of the arteries, and no ligatures were needed.

Under a stimulating and nutritious regimen the patient rallied, and after a considerable discharge of broken down and disorganized tissue, healthy granulations commenced, and recovery was uninterrupted. Under date of January 10, 1872, Dr. Whitney writes that the patient "is able to be about the neighborhood, the stump being almost entirely healed."

This case is reported on account of its bearing upon certain chirurgico-legal points. Perhaps mortification of either the upper or lower extremity following a fracture is one of the most frequent grounds of charges of mal-practice and of numerous prosecutions. Too tight or unskillful bandaging and neglect of dressing is generally alleged as the cause of the mortification, and suits for mal-practice against the attending surgeon are the frequent consequence. In most of the cases reported, in which suits have been brought and contested, and especially those referred to by Prof. Hamilton in his treatise on fractures and dislocations, the impression is left that improper bandaging was the cause of the untoward results in every case. The opinion of Prof. Hamilton may be inferred from the manner in which he alludes to these cases. He remarks: "While I would not deny that in all of these cases the sloughing might have been solely due to the tightness of the bandages, against which cruel and mischievous practice we cannot too loudly declaim, a knowledge of the anatomy of these parts, and the opinions of the very distinguished gentlemen who testified in defence of these surgeons, must compel us to admit the possibility of such accidents where the treatment has been skillful and faultless."

The case under consideration, it is believed, is one where the "*possibility* of such accidents" is reduced to a *certainty*. There can

Digitized by Google

be no question raised in the present instance as to the cause of the unfortunate result. The surgeon called was experienced and competent. It was but the next day after the accident that he noticed that the foot was cold, and orders were given that it be kept covered with hot flannel cloths. This was too soon for tight bandaging to produce such results.

In this case it is also to be remarked that, of all the soft structures of the leg, the skin alone retained vitality. The connective tissue, the muscles, arteries, veins, were all found to be in a state of decomposition. The vitality of the skin was kept up and maintained by the peculiarity of its circulation, which afforded a supply of blood, independent of the branches of the artery, given off below the point of injury.

The existence of life in the skin, while the subjacent and deeper seated structures were in a state of gangrene, would, in my judgment, be strong evidence that the cause of the mortification could not be external—that is from compression by bandages, etc., but rather from some interruption to the supply of blood through the deep-seated arterial trunks. Compression made by bandages, if of sufficient severity to cause mortification, must, it appears to me, involve the skin first, while the deeper parts would retain their vitality for a longer time, and *vice versa.*

In cases of mortification of an extremity following a fracture or other injury, or the application of dressings, the relative extent of the death of the skin, compared with that of the other structures, would form a diagnostic symptom of no inconsiderable value in determining the cause of the loss of vitality ; and in instances where doubt exists, my own judgment would be more or less influenced by the condition of the skin with that of the tissues lying beneath it.

Digitized by Google

ARTICLE IX.

Idiopathic Peritonitis. Annual Address delivered before the Medical Society of the County of Albany, November 12, 1872. By JOSEPH LEWI, M.D., President of the Society.

Gentlemen of the Society:

The variety of cases of peritonitis, as well as the many different causes by which this malady is contracted, make it very laborious for authors to dwell in detail on each; and while the student is allowed to profit in general knowledge by reading the lengthy articles about peritonitis, he does not derive the necessary information for the management of his cases.

And very naturally so. In most of the cases, peritonitis is the result of a traumatic injury, and the surgical as well as the medical treatment must depend upon the extent of the injury done to the peritoneum and adjoining parts. In other instances, peritonitis is due to effusion of the contents of an abscess into the cavity of the abdomen, or it is the result of a strangulated hernia, in all of which cases the treatment of the peritonitis will be subordinate to the general surgical treatment.

Peritonitis propagated from inflammations of other adjoining organs—stomach, liver, spleen, intestine—are considered and treated as secondary.

To puerperal peritonitis authors devote deservedly particular attention, on account of the frequency of cases, of the virulence of its character, and the great mortality from it at certain times in certain localities. The above named kinds of peritonitis are especially favored by the different authors of the present time with minute description of the nature, the symptoms and the treatment of the same, leaving for the *idiopathic*, or, as some call it, the rheumatic peritonitis, only a little space, under the idea that this malady, contracted by a cold, is very rare, and hardly ever attacks persons in general good health.

Although this last mentioned kind of peritonitis is not so frequent as inflammation of other serous membranes, especially the pleura, I venture to maintain that peritonitis, especially in childhood, say from two to fifteen years of age, is of more frequent occurrence than pericarditis, and, from causes to be stated, more fatal than pleurisy. I will also state here that a twenty-six years' practice has taught me

Digitized by Google

that this malady presents to a young practitioner more difficulties in forming a diagnosis and adopting a mode of treatment, and more embarrassment in giving satisfaction as to the prognosis, than any other inflammation. I therefore propose to say in this address a few words on *idiopathic* peritonitis.

Sometimes there are no premonitory symptoms, but in most of the cases a chill, slight or violent, will compel the otherwise well-appearing individual to retire from his avocation. After six or twelve hours the inflammation will, in very distinct cases, manifest itself by an intense fever, frequency of the pulse, high temperature, and a more or less violent pain in one or the other side of the abdomen, which side or spot will be very sensitive to the touch, so much so that the pressure of the bed-covers will be intolerable; the patient lying immovably on his back, his lower extremities drawn up. The patient talks little, and in a low tone. After a shorter or longer period the abdomen becomes bloated and filled with gas, which crowds against the diaphragm to such an extent that the lungs are compressed and impeded in their action. Respiration becomes difficult and frequent. Constipation and vomiting most generally accompany these symptoms of acute peritonitis. In fatal cases all these symptoms increase in intensity, the abdomen becomes hard and tympanitic, the lungs and heart become so compressed that the respiration is very laborious, and the agony of the patient is terrible. At last he becomes apathetic and delirious, the pulse grows smaller and more frequent, the skin is covered with a cold sweat, and the patient dies. In a great many cases the disease does not reach such a desperate height. The symptoms having culminated, the intolerable pains and difficulty of breathing grow gradually less and less severe, and the patient recovers after the lapse of a few days or weeks.

And in some instances, even after the malady has assumed all the bad features described above, it makes a retrograde movement; the symptoms come to a standstill, absorption of the infiltrated blood takes place, or an abscess forms, the contents of which either discharge through the walls of the abdomen by nature's effort or by surgical interference, or they penetrate into the adjoining rectum or bladder, whence they are expelled with the fæces or urine, and the patient may recover entirely, or may be troubled temporarily, or for the remainder of his life, with the results of this extraordinary termination of the disease.

So far the regular process of cases of idiopathic peritonitis, as described by most authors and known to all practitioners.

Digitized by Google

The management of such cases of peritonitis was, as late as twenty-five years ago, strongly antiphlogistic. Blood-letting by venesection and the application of leeches, mercurial preparations internally and externally, scanty nourishment and the mildest of drinks in the inflammatory stage; absorbents internally and blisters externally in the stage of exudation,—such has been the treatment prescribed by the authors of former times. This plan has now been almost universally abandoned as irrational and pernicious, and, although it has been demonstrated that by promoting the peristaltic motion of the bowels the symptoms of inflammation will become aggravated and the inflammation extend, and that the loss of blood (by venesection or leeches) will add so much to the general debility resulting from the disease itself, as to destroy the energy of the constitution of the patient so essential to reaction, and although we must admit that vast numbers of the human race have suffered an untimely death by this course, my long experience and close observation compel me to say here that there are exceptional cases of peritonitis, where the application of leeches, and even venesection, is not only permitted, but imperatively demanded, to save life in some instances, and to bring on a speedier recovery in others. If a person extraordinary in development and plethoric in appearance is, after exposure, etc., seized with all the above described abdominal symptoms to such a degree as to bring within twenty-four hours his pulse to 120 or 130, the temperature to 103°, and the respiration to 40 or 50; if delirium and a cyanotic appearance of the face should accompany these symptoms, a practitioner is, in my opinion, not only justified, but morally obliged to resort to blood-letting. I have seen in a large number of cases the most beneficial results from it.

The circulation and respiration improved so much that the inflammation took its natural course and was in time conquered by less heroic means; and it is to be presumed that in a majority of these cases the violent onset would have destroyed the patient before the disease had fairly developed, and before any other measure could have made any impression on the system thus disturbed.

But, with the exception of blood-letting in such exceptional cases, and counter-irritants in the later stages of the disease, all the appliances belonging to the antiphlogistic and depleting mode of treatment ought to be relinquished for all time to come.

In a great many, and, as my experience tells me, in a majority of cases of idiopathic peritonitis, the course is irregular, and there-

Digitized by Google

fore not easily to be distinguished from other complaints of the abdomen; and if the practitioner does not take heed, and is overhasty in forming a diagnosis, the patient's life may be endangered, and with it the reputation of the physician.

In such cases the patient becomes indisposed and morose, loses his appetite, and complains occasionally of a dull, annoying pain in the abdomen. Aversion to all kinds of solid food, and an inclination to vomit, satisfy him or his neighbor that his "stomach is out of order," and a "good, strong physic" is taken on his own judgment, or on the advice of a friend. The remedy so taken generally distresses the patient more or less; he tries, and after a while succeeds in throwing up the same, with whatever eatables were contained in the stomach, and a good portion of bile. After being relieved of the distress, but exhausted from the exertion of vomiting, the patient imagines that he feels better; but soon after he complains again about the pain all over the abdomen; and at this stage only, even in better classes of society, the physician is sent for. The patient explains to the doctor that "he is not sick; that his stomach was only out of order for the last few days; that he was constipated; that the physic he took seems not to have been strong enough for his constitution; that he vomited the medicine as well as bile, and that a strong laxative to remove the bile would probably be the best for his case."

The physician examines the patient, and ascertains that there is a circumscribed space on the abdomen painful to the touch; that there is no expansion of the abdomen, no tympanites, no fever; all the symptoms of the digestive organs correspond to the narrative of the patient, and he is very apt to act according to the suggestion of his patient, and to aggravate the case most decidedly. If the proper course is adopted, the patient will have the benefit of temporary relief under all circumstances, and, if it turns out to be a mild case, may recover within a few days. If it is a bad case, the symptoms will develop in the course of a day or two, so as not to leave any doubt in the mind of the physician as to the nature of the disease and the necessary remedies, and then it will be time to adopt a mode of treatment in accordance with the suggestions of the modern authors. However difficult it may be in the primitive stage of all such cases of semi-acute peritonitis to make a correct diagnosis, and however often the practitioner may be guilty of misconception and the introduction of improper treatment through the interference of the ignorant patient, it is far more difficult to

Digitized by Google

avoid mistakes in similar cases of children under six years of age. Compared with other disturbances of the abdominal part of the body, peritonitis is of such rare occurrence that the parents or guardians, in most cases, resort either to laxatives in the form of castor oil or rhubarb, or to very drastic vermifuges, and before the physician is called all the mischief is done and the case is desperate. The slight local pain has changed into a violent, excruciating one all over the abdomen. The physic given has not evacuated the bowels, but has caused them to swell up and be sensitive to the touch. Insatiable thirst, high fever, and a tendency to vomit, are the results of the harmless(?) medicine given yesterday. The physician, if not ripe in experience, is liable to misconception, where the history of the case is given to him by a talkative mother, who prejudices his opinion of the case; and where the general as well as the local symptoms of the inflammation are so indistinct as described above, he is the more liable to make a mistake as the patient is not sensible enough to describe his condition, correct the misstatements about the course and duration of his complaint, and, in his peevish condition, not inclined to answer questions. Misled in this primitive stage of the disease, and induced to administer purgatives, the physician will only find out his mistake when it is too late to correct it, and when, in consequence of his injudicious interference, the symptoms have assumed such a character as to make the prognosis very unfavorable. To avoid the commission of such mistakes in similar cases, I would advise all young and inexperienced practitioners to take the utmost pains in making the examination; to be reserved in expressing a decided opinion at their first and second call; to adopt an expectant course, and to use only such palliative remedies as will be beneficial to the patient; and to avoid all measures that could in any event have a tendency to promote the peristaltic motion of the bowels, or to irritate the serous membranes of the abdomen.

Warm applications in the form of wet flannel or poultices, small doses of opiates in the form of Dover's powder or a solution of morphia, mild drinks, a horizontal position, and positive rest will, in most of the cases, accomplish a sure and speedy recovery. In some cases the disease may assume a chronic course, and require absorbents, counter-irritants and tonics; in other instances the above described semi-acute inflammation may, after a few days, develop into a very violent acute inflammation, and require a more heroic treatment.

But under all circumstances, even if the diagnosis should turn out to be incorrect, and the patient should suffer from colic or worm-

Digitized by Google

fever, or the painful spot should develop into a muscular abscess, no harm will have been done, and no aggravation of the symptoms caused by the mode of treatment adopted.

In all cases of suspected peritonitis where the symptoms are not distinct and conclusive, the physician should call to mind all the diseases that could be mistaken for peritonitis. Catamenial colic, uterine colic, hysterical pain in females, pains from indigestion, bilious colic, nervous colic, inflammation of the duodenum, of the stomach, or of the liver, enteritis, retention of urine, worms and wind colic present in some instances symptoms similar to those described in semi-acute peritonitis. The physician may ascertain the nature of the disturbance by closely examining whether his female patient is at or near the period of menstruation, or whether she is pregnant; he may also be able to determine in a great many of these obscure cases that the tenderness and pain indicating peritonitis are dependent upon the irregular functions of some disordered digestive organ, or the presence of worms or gas in the intestines, and proceed energetically to relieve the patient at once; but if there remains a shadow of doubt in his mind about the existence of an inflammatory process in the peritoneum, he must content himself with the administration of such remedies and appliances as to relieve the patient of pain and distress, to give him the necessary rest and comfort, and to keep his strength and vigor intact for the expected struggle.

Now, gentlemen, let me congratulate you on the happy termination of another year of the Society's existence and prosperity; let me thank you in the highest terms for the support given me, for the numerous attendance at the meetings, for the interesting contributions and instructive debates, as well as for the peace and harmony maintained during the last year's administration. Allow me, gentlemen, also, to draw your attention to the memory of one who has been associated with this Society for more than half a century, who has been a useful and efficient member of this as well as the State Medical Society, and who departed this life, after having labored faithfully in the profession that he loved so well for more than fifty years, ripe in years and honored by the profession as well as the community. I allude to our brother the late Dr. Peter Van Olinda; and, while we deplore his loss, it is a matter of congratulation that this is the only loss by death our Society, numbering one hundred and fifteen members, has sustained; and he almost an octogenarian. You have this year admitted fifteen new members—the largest number during one year since the existence of the Society.

Digitized by Google

ARTICLE X.

Hemiopic and Sector-like Defects in the Field of Vision, and their connection with Diseases of the Heart and Brain. By H. KNAPP, M.D., of New York, late Professor in the University of Heidelberg.

The field of vision is the expanse of space which we take in while our eyes are at rest. The object on which our gaze is fixed is called the point of fixation. Its image is situated in the yellow spot, the most sensitive part of the retina. Though the integrity of this spot determines the acuity of direct vision, the preservation of the other parts of the retina, which determines the indirect vision, is hardly of less importance. Impairment of indirect vision may be irregular and circumscribed, consequent on diseases of the inner coats of the eye, or assume definite forms, depending on morbid conditions of other parts of the body, especially the heart and the brain.

As the eye is one of the most sensitive tests of pathological processes, the knowledge of its reaction in general disease is often of the greatest diagnostic and prognostic value, both to the practitioner and the clinical teacher. My remarks on this occasion shall be limited to the regular or definite forms of impairment of indirect vision, and their connection with, and significance in diseases of other organs than the eye. The picture under which they appear is easily recognized and appreciated; it shows either hemiopic or sector-like defects in the visual field.

The examination of the visual field may satisfactorily be done in different ways. The simplest method, and one which is sufficient for almost all practical purposes, is the following: Let the patient cover one eye, and incline his head toward the side of the covered eye, and a little upward. Then you should take a corresponding attitude about one and a half foot before him, so that, if he closes his right eye, you close your left. Let him look steadily at your open eye, while you look at his; then move a visual object—for instance your hand, or better, a small white ball on a black stick—in a vertical plane midway between his eye and yours, and ask him whether he sees the white ball while steadily looking at your eye. In this way you compare his visual field with your own, and perceive at once any deviation from it. This method is excellent in detecting readily and surely any limitation or defect of the visual

Digitized by Google

field. By some experience it admits an approximate trigonometric determination of the extent of the visual field. To do this with more precision, we have to map the field on a blackboard, and determine its extent by trigonometric calculation; or we must use a peculiar instrument for that purpose, the *perimeter*, invented by Professor Förster, of Breslau. Its main part is a graduated bar of brass, representing half the circumference of a circle, which, by rotation on its centre, can be made coincident with all the meridian planes of the eye. A small white square, by shifting over the blackened inside of the half-ring, indicates in degrees the extent of the visual field in the different meridians. The values are noted on a diagram, and a very accurate and comprehensive measurement of the visual field is thus obtained.

The regular defects in the field of vision may occur in one eye only, or in both, and may be either hemiopic or sector-like.

1. Monocular superior or inferior hemiopia may be called that condition in which the superior or inferior half of the visual field of one eye is absent. Allow me to illustrate it by an observation of my own, published in the Archives of Ophthalmology and Otology, III, 1:

Mrs. Catharine Lambert, of this city, 36 years of age, consulted me May 15, 1873. Five months previously, four weeks before a normal confinement, she experienced, without any other symptoms, a sudden haze before her right eye, which entirely obscured the vision for a few minutes, then rapidly and completely cleared up in the lower half of the visual field of that eye, whilst the upper half remained perfectly dark. Two years previously, shortly before, and soon after the blindness set in, she had attacks of acute pain under her left breast, which her family physician ascribed to pleuritis.

Present Condition.—The lower main branch of the central retinal artery of the right eye is like a thin red thread, lined on both sides by a white streak. The secondary branches show the same condition. The red central lines disappear at a short distance from the papilla, while the white streaks remain visible further toward the periphery. The arteries in the upper half, and in the whole ophthalmoscopic field of vision, appear normal. The optic disc is reddish in its upper, but white and punctate in its entire lower half. The fundus of the right eye, in general, has the same normal appearance in the upper and lower halves; and, moreover, does not differ from that of the left eye, which is normal in structure and function. The upper half of the visual field of the right eye is completely absent, while the vision in the lower appears perfect. She reads Sn. XX at 20′ distance with either eye. The sounds of the heart are normal. No other disease than that of the right eye can be discovered. The sight has not changed since the second day after the attack of blindness.

There are only a few of this kind on record, one each by Saemisch, Hirschmann (Zehender's Klin. Mon., 1866, p. 32), Barkan, and two by myself. (Arch. of Opth. and Ot. III, 1.)

Digitized by Google

Their characteristic features are:

"1. Sudden appearance of the impairment of sight, which at first manifests itself as an obscuration of the whole visual field of the affected eye, but more or less rapidly disappears in one part, leaving a defect in the upper or lower half.

"2. When a primary branch of the central retinal artery is obstructed, it results in superior or inferior hemiopia; but when only a secondary branch is obstructed, a sector-like defect in the upper or lower half of the visual field is observed. At least one border-line of both the hemiopic and sector-like defects coincides with the horizontal meridian.

"3. The portion of the optic papilla lying in the opposite direction to the defect in the visual field, becomes white and punctate—partial atrophy of the optic nerve—which is well set off by the remainder of the papilla retaining its usual appearance unchanged.

"4. The obstructed arteries become thin, seamed with white streaks, and disappear a short distance from the papilla. The veins are not changed.

"I do not know what other diagnosis than that of an embolism of branches of the central retinal artery could be derived from this series of symptoms. I do not doubt that many observations of superior or inferior hemiopia, for which no cause was found, were cases of embolism of a branch of the central retinal artery, and will in future be ascribed to it. All the symptoms above mentioned may not in every case be pronounced, but a part of them will render the diagnosis more or less probable. I recollect having seen cases of superior or inferior hemiopia in which only the opposite half of the disc was atrophic, but the arteries moderately well filled. This does not exclude embolism of a retinal arterial branch, as we see the same condition in embolism of the whole central retinal artery. It shows that a communication of the retinal with collateral arteries has been established."

One-sided superior or inferior hemiopia may, furthermore, result from compression of a main branch of the central retinal artery by exudation in neuro-retinitis consequent on brain disease. There is, as far as I know, no such case on record, but I can illustrate it by an example now under my observation.

A. Hess's daughter, of New York, 15 years of age, consulted me first, May 13, 1872. She had, during the preceding eight months, suffered from periodical headaches, which, in the last month, had become more intense, and been accompanied by nausea and frequent vomiting. I found paresis of the left external rectus muscle, of two weeks' standing, and the ordinary picture of neuro-retinitis in both

Digitized by Google

eyes, more pronounced in the right than in the left. Her sight was normal on both sides. This condition lasted, without a notable change, for six weeks; then a diminution of hearing to one-seventh of the normal standard in the right ear, and one-tenth in the left was noticed. There was some injection and swelling of the mucous membrane of the pharynx, but the drum and drumhead showed nothing abnormal. This state continued five weeks; then she experienced severe headache and vomiting, and periodical attacks of blindness, lasting severally a few minutes. The membranæ tympanorum were normal. Tuning-forks were heard when vibrating near the ears, but not when placed on the forehead. Hearing power for the tick of a watch was one-twentieth on the right, and one-thirtieth on the left side. There was a thick infiltration of both optic discs and surrounding retinæ; white, fatty-looking, round or oblong specks, arranged in a radiating order on the nasal side of both optic discs, more marked in the right than in the left eye. Perception of colors perfect, visual field of normal extent. During the following two months her condition changed but little; the visual acuteness of each eye sank at times below the normal standard, and again came up to it. Repeated headache, vomiting, hardness of hearing and neuro-retinitis remained the prominent symptoms of the disease.

On November 20, 1872, that is, about fifteen months after the beginning of the disease, the exudation in and around the optic discs began to diminish. In the meantime the sight of the left eye had fallen to one two-hundredth, while in the right it had continued normal; but the whole upper half of the visual field of the right eye was absent. The veins of the discs were tortuous, the arteries small and partially covered. On the 9th of December she had only a perception of light in the centre of the left eye, and S 20-100 in the right. The field of vision of the latter was contracted to a pear-shaped space, running from the point of fixation downward and outward about 30° in extent. The lower main branch of the central retinal artery of the right eye was thread-like, but enlarged gradually toward the periphery, giving off no secondary branches on or near the papilla. The other retinal vessels were distinctly visible, and did not differ materially from the normal appearance. Pressure on the globe emptied the veins on and near the papilla in the left eye, and made the arteries pulsate. In the right the same phenomena were produced, except that the lower retinal artery did not pulsate at all. The exudation, though having considerably diminished, still covered the area and vicinity of the discs, being distinctly raised in the left eye, but so thin in the right, that the margin of the papilla became visible on the inner and outer sides. The region of the yellow spot in both eyes was normal. Between it and the disc the above mentioned white spots still existed. The hearing had diminished on the left side to $h=\frac{1}{\infty}$ (tick of the watch in contact with the ear), in the right to $\frac{1}{4}$-120 (watch of 10′ hearing distance heard at half an inch); *v* (voice) R=5-60, L=$\frac{3}{4}$-60; *m* (small musical box, heard at 80′) R=6-80, L=9-80. Test with the tuning-fork was normal, that is, heard on the forehead and through the air near the ear. The pharynx was inflamed, the drumheads were a little reddish. Drums readily inflatable, yielding a full blowing sound, without increase of hearing afterward. Complete paralysis of the left external rectus muscle, but no spasms. Thus the disease progressed. The last examination was made on January 14, 1873. Her intellect and memory were weakened; she was completely deaf for all sounds, and had only faint perception of light. Both external recti were paralyzed. She had frequent convulsions, intense headache and obstinate vomiting. The pharynx was still red, but the drumhead looked normal. In the eyes the exudation had diminished; the discs were white, the bloodvessels showed the same condition as before, that is, the inferior main branch of the right eye was excessively thin, while all the other bloodvessels were well filled. The treatment of the patient which I had directed in com-

Digitized by Google

mon with Dr. A. Jacobi, the family physician, consisted in mercurials and iodide of potassium, and such remedies as her symptoms seemed to require at different periods of her disease. Leeches and mercurials appeared to have the best effect.

The clinical diagnosis of this case is a morbid process (probably fibro-sarcomatous tumor) at the base of the brain in the neighborhood of the petrous bones. The blindness was caused by the propagation of the exudation from the arachnoidal cavity through the sub-vaginal space of the optic nerve and the lamina cribrosa into the eye. (See the remarkable case published by A. Böttcher in Arch. Ophth. and Otol. III, 1.) The hemiopia superior oculi dextri might be considered as having been caused by the pressure of a tumor developing under the lower portion of the right optic nerve. The ophthalmoscope discovered, however, a more direct cause in the obstruction of the inferior main branch of the central retinal artery. This obstruction was probably produced by the pressure of the exudation in the papilla optica, aided, perhaps, by the contraction of new-formed connective tissue strangulating the artery. This shows the advantage of direct examination.

The affection of the hearing may have had a similar cause, but may have also resulted from direct pressure on the auditory nerves, though a labyrinthine affection induced by the intra-cranial affection in a way similar to that of the eyes, seems far more probable. The morbid product in the brain was more developed on the left side, because the left acoustic, optic and abducent nerves were sooner and more deeply affected than the nerves of the right side. The disease will, in all probability, soon terminate fatally, and I trust that a post-mortem examination will be permitted.

Hemiopia superior or inferior in one eye may be the consequence of pressure upon the optic nerve during its course from the chiasma into the eye.

Tumors, hemorrhage, exostoses and periostitis may be the cause of the pressure. Such cases are exceedingly rare. I do not remember ever having seen any, and will, therefore, no longer dwell upon them.

Among the intra-ocular diseases which are apt to produce more or less complete one-sided hemiopia, especially that of the upper and lower parts of the visual field, I may mention, above all, detachment of the retina; then, more rarely, hemorrhage, tumors and glaucoma. As all these diseases are easily recognizable, their differential diagnosis from hemiopia and causa extra-oculari will present no difficulty.

Digitized by Google

The sector-like defects in the visual field of one eye have many features in common with superior and inferior hemiopia. They are produced by the following conditions:

1. *Embolism of a secondary branch of the retinal artery.* Allow me to illustrate this by an example from my own practice, the second on record. (Arch. of Ophth. and Otol. III. 1.)

Mrs. Dietr. Hornholtz, of New York, 37 years old, consulted me, March 29, 1872. She stated that six years previously she had felt ill, feverish, chilly and weak. She had suffered from headache and palpitations, but not from articular rheumatism. In this state of health, when she was sewing one afternoon, both her eyes became suddenly obscured, and she experienced intense headache. In the course of a few minutes her left eye cleared up, but the right remained dark much longer, improving gradually in a few weeks to the condition in which it has continued ever since.

Status præsens.—No outward changes visible. Sounds and size of heart normal. S—20-20 in the right—20-40 in the left eye. A sector of the visual field of the left eye, comprising its inner and upper third, was absent. It was bounded inwardly by the horizontal meridian, and upwards by a line passing from the point of fixation diagonally across the upper and outer quadrant. A full quarter—the lower outer—of the optic disc was white and punctate, the remainder reddish, as usual. One arterial trunk, the lower and outer, was exceedingly thin, and bordered on both sides by a white line extending about 1 P (diameter of papilla) beyond the limit of the optic disc. No other abnormity was seen in this, and none at all in the outer eye.

The other example of this defect was published by me a few years ago (Arch. of Ophth. and Otol., I, 1, p. 64, etc.).

A woman, 37 years of age, while suffering from acute articular rheumatism, with pericarditis and endocarditis, noticed one day in reading that a haziness was spreading over her book. In closing her eyes alternately, she found that the right had preserved its normal sight, but the left had become impaired. Three weeks later she consulted me, stating that no change had taken place in her sight. I found in the right eye vision=1, in the left=$\frac{1}{2}$. The visual field of the left eye had a defect which corresponded pretty accurately to the inner and lower quadrant, so that in this space neither the hand nor a candle was perceived. The apex of this triangular defect was directed toward the point of fixation, without reaching it entirely, but lying from one to two decimetres beneath it. The limits of the defect were not sharply defined lines, but formed a small band of about one centimetre in breadth, in which the perception was only diminished. Vision in the remaining part of the visual field was good.

The ophthalmoscopic conditions of the fundus of the eye are represented by large chromo, fig. 1, Plate A, *loco citato*, in the inverted image.

The optic disc was normal in the two upper thirds of its area, the centre being whiter than the periphery, as usual. The principal branches of the central artery had normal width at their origin, and the upper branch remained so, but the lower was abruptly hidden from view, midway between the centre of the optic papilla and its margin, by a reddish gray opacity, beyond which the retinal veins emerged in normal size; but the arteries showed most remarkable alterations. The principal branch, directed downward and inward, appeared extremely thin, like a fine red thread that could be seen distinctly only by a very accurate adaptation with the ophthalmoscope. This was continued for a distance about equal to the length of

Digitized by Google

the optic disc's diameter; then it abruptly enlarged to about two-thirds the calibre of its corresponding branch in the superior part of the retina, obtained a double outline, pursued its regular course toward the periphery, dividing in secondary and tertiary twigs, just as in a healthy eye. The other parts of the retina were normally supplied with arterial and venous bloodvessels.

The veins in the diseased lower and inner quadrant were enlarged and tortuous; the course of some of them could not be traced to the papilla, and only very small communications between them and the other veins were seen. Numerous apoplectic spots were scattered over this triangular space. The majority of them lay around small venous twigs on both sides of the larger branches. The retinal tissue of this space had become opaque, reddish yellow. There was no hemorrhage seen on the track of the choked artery or its branches.

The treatment was general, mainly directed against the disease of the heart. I observed the patient eight months. The hemorrhagic spots were gradually, but slowly absorbed; the veins became less tortuous and dilated; the arteries did not change at all. The retinal tissue in the triangular space became whitish gray. The acuteness of sight rose to nearly the normal standard, but the sector-like defect in the field of vision remained unchanged.

The anatomical lesion in this case was an embolic obstruction of the outer upper secondary branch of the central retinal artery, followed by a hemorrhagic infarctus. This case is the only instance that a hemorrhagic infarctus has been observed in the living body, and adds another to the many triumphs for which our science is indebted to the great inventor of the ophthalmoscope. It lifts the veil from a lesion we have hitherto only seen in the post-mortem room.

As to further particulars and an explanation of the divers symptoms of this case, I beg to refer to the original communication. We may conclude from it that sector-like defects in the visual field occurring suddenly, are sometimes due to embolic obstruction of a retinal artery, and then we have to search for the primary disease in the system of circulation; furthermore, we have then to expect that embolic processes in other organs, especially the brain, are likely to follow, and can guard the patient against them by carefully attending to his disease of the heart.

Sector-like defects of the visual field may further result from embolism of a ciliary or choroidal artery. It is strange that only a few cases of this affection have been described, though the occurrence of embolic obstruction of choroidal arteries seems to rely on more favorable anatomical conditions than that of the retinal arteries. Their occurrence may certainly be more frequent, but their diagnosis is less precise and easy. There are so many communications between the arteries of the choroid that the obstruction of one artery will soon be followed, and its consequences rendered innocuous, by the establishing of collateral circulation. The symptoms of this

Digitized by Google

affection, it would seem, can only be transient. Let me illustrate it by an example which I published in Graefe's Archives XIV, 1, p. 245.

A young lady had acute articular rheumatism and endocarditis. One day she suddenly experienced intense vertigo and obscuration of both eyes. The sight of the left eye was restored in two minutes, that of the right was only partially restored, a dark cloud covering the inner part of the upper half of the visual field. In this eye she had constant coruscations. A few days later, at the examination, I found that there was a defect in the visual field occupying the whole upper and inner quadrant, its inferior boundary extending somewhat below the horizontal meridian. The yellow spot appeared normal, but the retina around it was opaque and diffusely gray-blue, extending to the papilla, veiling its outer and lower edge. The retinal tissue in this region was distinctly raised over the surrounding level, and the veins which passed through it were enlarged. In the course of six weeks she had two similar attacks, one in the same eye, the other in the other eye, producing the same symptoms. Recovery took place in either eye; the hyperæmia and exudation disappeared first, the acuteness of vision, formerly impaired, returned to its previous standard, the defects in the visual field vanished slowly. After six months a scotoma was still present. In 1871, four years later, I saw the patient again. Her eyes were perfectly normal, and had caused her no more annoyance.

In other cases of the same nature the defect in the visual field is triangular, its apex directed to the point of fixation without always reaching it. In others, again, it represents an irregular scotoma, especially when its seat is near Mariotte's blind spot. The suddenness of its appearance, the hyperæmia and the cloudiness of the corresponding part of the retina, always more pronounced near the optic disc than toward the periphery, in combination with endocarditis and other signs of embolism, are the main symptoms to support the diagnosis. The swelling and congestion of the retina being the consequence of collateral hyperæmia are most pronounced near the optic disc, because only in that region there are direct anastomoses between the retinal and the choroidal bloodvessels.

Before I leave the one-sided hemiopic and sector-like defects in the visual field, I will not omit mentioning that sometimes they are also caused by cerebral process, for instance apoplexies, tumors, etc. But they commonly are either the precursors or the sequels of bilateral defects, into which they develop by the increase of the intracranial affection, or are left behind as lingering symptoms during the convalescence. In the one and the other case they are of great prognostic value.

The bilateral hemiopic affections are nearly always of cerebral origin. Their diagnostic and prognostic significance is based on the decussation, or rather semi-decussation, of the optic nerve fibres in the chiasma. But is this decussation really a fact? It may not

Digitized by Google

be without interest to mention that Newton was the first who, from physiological reasons, advanced the possibility of the partial decussation of the optic nerves (Opticks, 1704, London; III. Book, Query 15, p. 136). In 1723, three cases of hemiopia were explained by the semi-decussation of the optic nerve fibres in the chiasma, in a dissertation by Vater. The decussation is, however, doubted by Mackenzie and others, as not being thoroughly proved by anatomical investigation, and being insufficient to account for all the pathological facts that come before the practitioner. We shall see how far this is true.

Leaving the inter-commissural fibres, whose function we do not know, out of the question, we may state that the right optic trunk supplies the outer half of the right eye and the inner half of the left; that the left optic trunk supplies the left half of each retina; in other words, the outer fascicles of each optic trunk are not crossed; the inner fascicles are crossed.

1. *The most frequent kind of binocular hemiopia is the homonymous lateral hemiopia.* The patient sees only the right or the left half of objects when he closes one eye, as well as when he keeps both open, that is, either the right or the left half of the visual field of each eye is absent. We have post-mortem examinations enough to establish it as a fact that in such cases an apoplexy, a tumor, or some other morbid condition destroyed the corresponding optic trunk, or kept it for a time in suspense. In the case of destruction, the hemiopia is permanent. Ophthalmoscopically there is at first nothing abnormal to be noticed, and as to the appearances months and years after the apoplexy, there is a diversity of opinion among authors. Von Graefe said that the corresponding-half of each optic disc looked white, atrophic; but Mauthner found in one case that the papilla into which the crossed fascicle entered, was totally atrophic, whereas that disc into which the lateral fascicle entered, appeared entirely healthy. I am unable to give an opinion on this subject, not having examined the cases which came under my observation with particular reference to this condition. In some I found, on ophthalmoscopic examination, that six months after the apoplexy and later, nothing abnormal was noticed.

If the apoplexy or some other affection in the brain terminates in recovery, we frequently find that the hemiopia disappears. The visual field is restored in such a manner that the defect begins to diminish either on its upper or lower, not on its lateral boundary. While the improvement is going on, we notice sector-like defects

Digitized by Google

in both eyes, varying in extent. As these cases are important to the practitioner, I will cite an example.

E. Baeringer, of Williamsburgh, N. Y., 50 years of age, consulted me January 29, 1869. Nine days previously, when awaking in the morning, after an undisturbed sleep in a railway carriage, he noticed that his sight was greatly obscured, and he felt heaviness and pain in his head, and nausea. He went without delay to a competent oculist, whose name I have not noted, and who wrote me afterward that Mr. B. had had right-sided hemiopia, with the symptoms of an apoplectic attack. I found the right upper quadrant of the visual field of both eyes absent, the limits sharply defined—R S=20-100, L S=20-50, Sn 1¼ with each eye. Nothing abnormal with the ophthalmoscope. Sensibility and mobility in all parts of the body normal. Three weeks later, the defect in the visual field was smaller, having receded from both the horizontal and vertical meridians of each eye, more in the left than in the right. Ten days later he had another attack of headache, nausea and vomiting. His sight, however, was not affected by it; the defect in his visual field was even smaller than before. The attack disappeared. Three weeks later, on March 12, that is, seven to eight weeks after the first attack, I found only the remotest parts of the right upper quadrants of his field of vision absent, and May 25, the visual field was completely restored; R S=20-40, L S=20-30. In the interior of the eye no abnormity.

2. *Hemiopia superior or inferior binocularis is not very common.* The line of demarcation is usually not sharply defined. Exudative processes, hemorrhages, tumors, periostitis, etc., pressing on the upper or lower side of the chiasma, must be considered as the causes of this difficulty. The literature on this kind of hemiopia is exceedingly scant.

Mauthner (Casuistik der Amaurosen, Oesterr. Zeitschr. f. prakt. Heilkunde, 1872) describes a case of bilateral superior hemiopia, caused by an apoplectic surprise. The line of demarcation was ill defined, in the lower half of the visual field nothing abnormal. S=$\frac{25}{20}$. Ophthalmoscopic appearances normal. He thinks that a flat tumor on the base of the skull, immediately under the chiasma, was the cause of the hemiopia. He says: "There is no well-described case of superior or inferior bilateral hemiopia on record in which the line of separation was sharply marked and coinciding with the horizontal meridian."

On August 14, 1872, I examined, through the favor of Dr. Woodruff, of Brooklyn, a patient, who, five months previously, had lost his sight in two or three days. He improved gradually. I found white atrophy in both discs, blood-vessels small, in the left some venous hyperæmia, and the borders of the disc veiled by semi-transparent exudation. R. S—2-200; L. S—20-40. The lower half of the visual field of both eyes absent. The patient had no headache, no nausea, nor other general disturbances.

It seems that the origin of this disease, too, was an intracranial hemorrhage, on account of the rapidity with which the sight was

Digitized by Google

lost. In what part of the brain, whether above the chiasma, or above the roots of the optic nerves—the thalami optici and the corpora quadrigemina—I am unable to tell. It is possible also that the upper portions of these organs themselves were the seat of the morbid product which at first suspended the function of the visual organ altogether, but by its absorption, the lower halves of the optic nerves regained their power.

Another case may still be cited on account of its general importance.

Mrs. Joseph H——, of New York, 86 years of age, consulted me, May 25, 1872. Six months previously she had contracted syphilis, followed two months later by a cutaneous eruption, rheumatic pain in her joints, headache, and a painful inflammation of both eyes, for which she was treated, "homœopathically," with atropine instillations and mercury. I found iritis, opacities of the vitreous body, and neuro-retinitis in both eyes. R. S—20-200; L. S—20-50; visual field complete. I treated her with the same remedies, "allopathically," but her recovery was tardy. After five weeks the iritis had disappeared, the vitreous was much clearer, but the neuro-retinitis and her sight were not improved. She could not see in the lower half of the visual field of her left eye, while the field of vision of the right eye was of normal extent. She was then admitted to the hospital and treated by hypodermic injections of bichloride of hydrargyrum from ½ to 1-5 of a grain daily. The visual field of both eyes showed a triangular defect inward and downward. Under the above mentioned treatment the turbidity of the vitreous body and the neuro-retinitis diminished. She was discharged after seven weeks. S—20-50 with either eye, and 20-40 with both. The defects of the visual field had contracted. During the cold weather of this winter she had a relapse, for which I treated her with iodide of potassium, 30 grains pro die. The left eye was clear and its optic nerve almost normal, the right optic nerve was swollen and opaque. The arteries in both distinctly visible, normally filled, and, on pressure upon the eyeballs, regularly pulsating in all their main branches. The visual field of each eye had a symmetrical defect downward, beginning 10° under the point of fixation, slightly sloping downward toward the right side, but more abruptly toward the left. In the middle there was a portion of the defect common to both eyes. The acuity of sight was R—20-100; L—20-40. The patient nearly always complained of headache, and occasionally of nausea and vomiting.

The peculiar limitation of the visual field in this case points again to a pathological condition in or near the upper part of the chiasma or the corpora quadrigemina. Neither periostitis of the walls of the optic foramina, nor an exudation between the sheaths of the optic nerve or in the nerve itself, can explain the defects in the visual field of each eye. Nor can the defect depend on an impediment in the circulation of the retina, for the arteries of the discs were well filled, and pulsated on pressure.

3. *Temporal binocular hemiopia* is that anomaly in which the external half of the visual field of each eye is absent. There are about six well-described cases of this kind on record, in which the

Digitized by Google

post-mortem examination showed that a tumor, originating from the hypophysis cerebri, compressed both inner sides—fasciculi cruciati—of the optic nerves, and destroyed the function of the inner half of each retina.

One of these cases is published in Graefe's Archives, VIII, 1, p. 160, etc., by D. E. Müller, in 1861. A servant girl, 22 years of age, healthy, with no indication of syphilis, lived in the winter of 1854–55 in a damp and cold basement room. In the spring she noticed, by chance, an obscuration of the temporal side of the visual field of her right eye. While this obscuration gradually increased, the temporal side of the visual field of the left eye was obscured, and not long afterward she became totally blind in both eyes. There were no symptoms of a cerebral disease present, as vertigo, tinnitus aurium, disturbances of motility, sensibility, and of digestion, or weakness of memory. The ophthalmoscope revealed no abnormity whatever. Dr. Müller diagnosticated "rheumatic amaurosis," and treated the patient for six weeks with Heurteloup's artificial leech, purges, diaphoretics, Zittmann's decoction, sublimate, iodide of potassium, and a seton in the nape of the neck. During this treatment, the vision gradually returned, first in the right half of the visual field of the left eye, then in the left half of the visual field of the right eye. After some weeks she could read ordinary print without difficulty. The exact examination of the visual field discovered the surprising fact, that its inner half was absent in either eye, and the outer perfectly normal, the lines of separation being vertical and well defined. This condition lasted eighteen months. Periodic, principally frontal headache set in, followed by coruscation, tinnitus aurium, vertigo, weakness of intellect and memory, but no paralysis or anæsthesia. The vision in the outer halves of the visual field became so impaired that she could scarcely find her way. Death ensued, after a severe attack of headache, in a comatose state, three years after the beginning of the disease.

These symptoms could only be referred to a disease of the anterior inferior portion of the brain. The autopsy showed a tumor as large as a medium-sized apple, situated on the carious sella turcica, perforating the dura mater, producing a moderately deep impression in the anterior lobes of the brain, reaching in front along the lamina cribrosa to the spina frontalis, and behind to the chiasma n. opticorum, the inner fascicles of which it had destroyed, and the outer ones crowded to the side. Pathologically it was a sarcomatous degeneration of the hypophysis cerebri.

A very similar case, confirmed by an autopsy, is described by Prof. Saemisch, of Bonn, in Zeh. Klin. Monatsbl., year 1865, p. 51–55. Von Graefe published in the same volume, p. 268, another similar case, terminating in recovery. He diagnosticated periostitis, but it is possible that a transient disease of the hypophysis may have been the cause. As this strange appendage to the brain, by its location—being wedged in between the chiasma and the optic trunks—is particularly liable to implicate in its diseases the inner fascicles of the optic nerves, and two autopsies have confirmed this possibility, I

Digitized by Google

should, in case of temporal hemiopia, above all, suspect a disease of this organ.

4. The last kind of hemiopic affection of which I have to speak, is *binocular nasal hemiopia*, the symptomatic expression of paralysis of the outer half of each retina. Though very rarely met with, some cases by competent observers are on record. Von Graefe says (Arch. II, 2, 1856, p. 287): "Only once have I seen hemiopia from a central cause, where the outer halves of both retinæ were paralyzed. I know of no anatomical explanation for it, nor were the other symptoms pronounced enough to warrant a special diagnosis." Pagenstecher has seen two cases, described in his Clinical Observations made in the Ophthalmic Institute at Wiesbaden, No. III, 1866, p. 72, etc., by Dr. Mandelstamm.

The one was that of a robust farmer, 25 years old, who had had frequent headache and vertigo for six months before he came to the hospital. He could not see in the inner half of the visual field of each eye. The ophthalmoscope showed neuro-retinitis. In the course of some weeks, the patient became totally blind, and left the institute.

The second case was that of a healthy-looking girl of 21 years, whose right eye had begun to fail nine weeks before her admission to the hospital, headache, vertigo and trembling of her limbs having been present long before. Neuro-retinitis, with perivasculitis in both eyes, and nasal hemiopia, without a sharp boundary line, were found. She was discharged unimproved by treatment.

Mooren mentions briefly, in his "Clinical Observations," that he has seen three cases of nasal hemiopia. The ages of his patients were between 20 and 50 years.

These are all the cases on record as far as I can ascertain. How to explain this anomaly? Symmetrical tumors, pressing on the outer portions of the chiasma of the optic trunks seem exceedingly improbable; yet Mauthner (l. c.) thinks that these very rare cases may have an equally rare origin. Others seem to explain them by the supposition of a double-decussation of the optic nerve-fibres. Mandelstamm's diagnosis that the two cases related by him were to be referred to a tumor situated behind the chiasma, and between the optic trunks, would have no sense without this supposition, though it be not mentioned. Some modern anatomists seem also to favor this view; nevertheless there are no anatomical facts to support it, and pathology and clinical observations have not yet advanced any data that subvert it, though some cases are with it in apparent conflict.

I saw, in the summer of 1872, two cases of binocular nasal hemiopia which were very similar in their symptoms. I shall describe only the one which was illustrated by an autopsy.

Digitized by Google

R. J. D——, of New York, 60 years of age, consulted me, August 14, 1872. He had lost the sight of his left eye almost completely ten days, and that of his right eye two days previously. For some years he had had short attacks of dizziness, so that, when walking in the street, he was obliged to lean against the railing to prevent himself from falling. Headache and nausea often accompanied these attacks. He had otherwise been in good health and spirits. His intellect, too, seemed unimpaired, though his memory frequently failed him. From Dr. Keyes, his family physician, and Dr. R. Derby, who was consulted when the eyes became affected, I learned, in a consultation on August 15, that the left eye, at the beginning of the affection, had suffered from neuro-retinitis, the arteries being thread-like, the papilla grayish white. The visual field had been limited and the sight so much reduced that only movements of the hand were seen. The other eye was found normal in structure and function, its visual field in particular of usual extent.

I found the left eye alight, in the sight marked neuro-retinitis, the retinal arteries in both small, the veins well filled. R. S—2½-200; L. S—½-200. The hand was seen with either eye only in the outer half of the visual field. The line of separation between the preserved and obscured halves of the field was vertical in the right eye, but somewhat oblique, from above and inward to downward and outward, in the left eye. The patient had headache, vertigo, nausea, and vomiting every now and then. His treatment consisted in iodide of potassium and tonics. After a few weeks, during which his condition had not materially changed, he went to New London, where his general health was improved. I saw him there on the 15th September, and found his sight the same as before, the hemiopia nasalis in the left eye had not changed, but in the right only the lower and inner quadrant of the visual field was absent. The exudation in the right eye had greatly diminished; in the left it had disappeared, leaving a white, atrophic optic disc. The retinal arteries in the left eye were very thin, and in some places white, as if containing no blood; those of the right eye were broader, but still narrower than in the physiological conditions, showing here and there some white streaks too, but less extensively than those of the left retina. This condition struck me as very peculiar, being similar to perivasculitis, only less uniform. The patient returned to the city in the latter part of September. He complained of a sensation of heaviness in his head. The exudation in the right eye diminished gradually. On October 10, the upper and lower borders of the right optic disc were veiled, the inner and outer ones clear. No change in the blood-vessels. He counted fingers at ten feet with that eye, and his visual field was now of normal extent. The left eye showed no change; he could see only the movements of the hand. On October 31, Dr. Keyes and myself met Dr. Brown-Sequard in consultation. The patient was ordered bromide of ammonium, 12 grains three times daily. A week after he stated that his head felt freer. In the right eye his sight was 12-200, and his visual field complete. The neuro-retinitis had disappeared. The nerve looked white. In the left eye no change. November 10, he had a severe attack of gastralgia which lasted thirty-four hours, and prostrated him very much, but produced no change in his eyes. On December 26, 1872, he died calmly, his forces having gradually sunken. Neither coma, nor convulsions, nor paralysis preceded his death.

Thirty-six hours later I made the autopsy, aided by Dr. Keyes and Dr. T. R. Pooley. The brain was found healthy, but very anæmic. No exudation, no neoplasm anywhere. All the arteries at the base of the brain showed a high degree of atheromatous degeneration; their calibre was unequal, on account of numerous contractions, even in small portions of the tube. When cut, they remained patent.

Digitized by Google

The internal carotid and the anterior cerebral arteries were placed astride on both sides of the chiasma, being in immediate contact with its outer sides and that of the optic nerves. The posterior communicating arteries passed in the same manner under the optic trunks. The whole circle of Willis was so stretched, that each side, being composed of the anterior cerebral, internal carotid, posterior communicating and posterior cerebral, formed almost a straight cord. As this very inelastic and hard cord was found in immediate contact with the outer sides of the chiasma, we may, without straining an argument, see in this peculiar condition the pathological cause of the hemiopia nasalis binocularis.

The chiasma and the optic nerves appeared unusually flattened, and when I compared them afterward with other similar specimens taken from healthy bodies, their atrophy was unmistakable. After thorough hardening, I shall examine them with the microscope, fully to ascertain their structure.

I think that a temporary partial obstruction in Willis' circle produced an impediment of the current of blood, swelling of the arteries, lateral pressure upon the chiasma and optic nerves, and exudation into the arachnoid cavity, which traveled through the inter-vaginal space of the optic nerves into the eyes, causing neuro-retinitis, impairment of vision, and atrophy of the optic nerves. The hemiopia was occasioned by direct pressure of the swollen, stretched and probably inflamed arteries on the chiasma and optic nerves. On the left side the effect of the pressure was more marked, as it had lasted longer, and was probably of greater intensity, the hemiopia being permanent, and passing over into amaurosis. On the right side the optic nerve was not so thin as on the left. It had suffered less; the hemiopia was only temporary, and the sight improved gradually.

This case, it seems to me, gives a simple and satisfactory explanation of binocular nasal hemiopia. The occurrence of this kind of visus dimidiatus may not always, for instance in younger individuals, depend on endarteriitis atheromatosa, but on other symmetrical morbid processes in the arteries near the chiasma, these arteries having so peculiar an arrangement, that pressure upon the sides of the chiasma and the optic nerves can easily be produced.

Thus the last group of clinical observations which seem to be in conflict with the semi-decussation of the optic nerves, is brought in harmony with it, and again a dark point of our science seems cleared up.

Digitized by Google

ARTICLE XI.

A Case of Remarkable Nervous Perturbation. By C. A. ROBERTSON, M.D., M.M.S.S., Member of the American Ophthalmological Society, Ophthalmic and Aural Surgeon at St. Peter's Hospital, Albany, and at the Troy Hospital.

The following case illustrates a curious reflex nervous action, and the phenomenon presented is, I believe, quite *sui generis*. Mrs. S——, aged fifty years, was operated on for the removal of a senile cataract in the right eye. Patient was healthy, rather below medium size, and mentally a little sluggish. Her eyes were small and deeply set, with shallow anterior chambers.

A lower section of the cornea was made with Beer's knife, and, in order to secure ample room for the lens to make its exit with facility, the section was effected well in the sclero-corneal junction. After the removal of the cataract, which was readily accomplished, the corneal flap came nicely into apposition.

At the expiration of a week, during which time the patient had been kept very quiet, and before the eye-lids had been separated in order to ascertain the result of the operation, the patient began, for the first time, to complain of pain in the eye. On examination of the eye, union of the corneal flap was found to have taken place properly, but the iris was seen to be badly inflamed. Owing to the intolerance of light, no attempt was made to determine the degree of vision. The pain that had set in at this time increased, and was, from time to time, excessively severe. The malady, an *irido-choroiditis*, resisted for weeks every means employed for its mitigation.

Early one morning she sent for me, and, on visiting her, she complained that she was suffering from a most intolerably noisome stench. She seemed unable to find language strong enough to express her disgust for the foul odor that tortured her, but the anguish portrayed on her face supplemented the narration which her tongue inefficiently essayed.

She said that an unpleasant smell commenced the previous evening, and gradually grew stronger and stronger, until now she could bear it no longer and live. She could compare it to no smell she had ever known before, for it was worse than all conceivable bad odors combined, she said. As there was no unpleasant odor in the apartment, perceptible to any one else, this was at once regarded as a subjective sensation, referable to a reflex excitation of the olfactory

Digitized by Google

nerve; in other words, it was a neuralgia in a nerve of special sense, and was undoubtedly aroused by irritation of the ciliary nerves consequent upon the operation.

In order to deliver her from her mephitic torture, at least temporarily, I made a hypodermic injection of a solution of sulphate of morphia into the arm. She soon fell into a tranquil sleep, which lasted three or four hours. When she awoke, the detestable odor was gone, and did not afterward re-appear.

Digitized by Google

ARTICLE XII.

Perineal Lithotrity. By JOHN W. S. GOULEY, M.D., of New York city.

I have the honor to call the attention of this Society to the treatment of patients affected with large urinary calculi, by a method which has lately created much interesting discussion in France, and about which I am anxious to obtain the views of those among us who have had occasion to extract large stones from the male bladder by any of the various modes of lithotomy.

The name of perineal lithotrity was given, in 1862, by Professor Dolbeau, of Paris, to an operation completed in one sitting, by which the membranous portion of the urethra is opened, the prostate and neck of the bladder dilated instead of being cut, and a large stone crushed, and the fragments immediately extracted.*

The great dilatability of the vesical neck had long been discovered, but very few applied the discovery to the treatment of calculous patients, and many feared to attempt dilatation, on account doubtless of the fatality of the Marian operation, in which there was always laceration, and not expansion. Mr. Dolbeau, however, by patient experimentation, ascertained the extent to which dilatation of the vesical neck could be safely carried, and upon it is based the success of his operation. This resembles some of the old and rejected operations, but careful analysis of its various steps will show that it is really new.

Incision of the urethra and dilatation (?) of the prostate originated in the sixteenth century, but Mr. Dolbeau incises the membranous and not the spongy portion—as in the Marian operation. He dilates, with the greatest care, the neck of the bladder, without cracking even the mucous membrane, and uses for that purpose an ingeniously contrived six-branched instrument, instead of forcing in the blunt gorgets used in the *apparatus major*.

Sir Astley Cooper, with the assistance of the Arnotts, after incising the perinæum, made gradual dilatation by fluid pressure, and in thirty hours extracted a calculus the size of a walnut—but Mr. Dolbeau dilates in a few minutes, without tearing.

Dr. Willis proposed an external urethrotomy in the membranous region, and gradual expansion, with Arnott's dilator, sufficient to

* Dolbeau. Traité pratique de la Pierre dans la Vessie. Paris, 1864. P. 346 et seq.

Digitized by Google

extract a moderate-sized calculus, and named the operation "lithectasy or cystectasy."* He advised fragmentation of large calculi, and his operation is the nearest approach to perineal lithotrity.

Mr. John Douglas (1727) is quoted by Dr. Willis as proposing to gradually dilate fistulæ in perinæo with sponge or gentian tents, until a pair of forceps could be introduced into the bladder and a small stone extracted. Bouisson, of Montpellier, performed lithotripsy in several sittings, through fistulæ in perinæo, previously dilated or incised, and also named his operation perineal lithotrity.

Mr. Allarton, in median lithotomy, makes a small perineal incision, but dilates the prostate with the finger, while Mr. Dolbeau insists that the finger must not be introduced at all.

The incision in Mr. Dolbeau's operation is smaller and nearer the anal margin than in any of those above mentioned ($\frac{3}{16}$ of an inch in length); dilatation is made from the skin to the bladder, and the whole track is nearly cylindrical. I believe this method of operating is destined to supersede Mr. Allarton's.

Fragmentation of large calculi during lithotomy, dates as far back as the time of Ammonius of Alexandria, who lived two hundred and seventy-six years before the Christian era, and who made use of a sculptor's chisel, introduced through the perineal wound, to break up by sharp blows stones too large to be extracted entire.

Franco, Paré, Covillard, Lecat, the Colots, Heister, Frère Côme, all used strong forceps, more or less clumsy, to break up large stones during lithotomy.

Among the moderns, Civiale, Willis, Nélaton, Allarton, and others have advocated fragmentation of large calculi. Malgaigne describes the combination of lithotomy and lithotripsy under the name of lithotriptic lithotomy,† and traces it to its origin in remote antiquity.

Mr. Dolbeau's method of breaking up calculi through the dilated prostate differs from all of those mentioned above. He uses strong but small forceps, that can be opened without injuring the vesical neck, and with them reduces the stones to very small fragments and to dust, and immediately extracts the debris, by means of very small forceps or with the scoop. He concludes, from his experiments on the cadaver, that the vesical neck cannot be dilated beyond a diameter of twenty millimetres (thirteen-sixteenths of an inch) without tearing the mucous membrane and prostatic tissue, and that the

* Willis on the treatment of stone in the bladder by medical and mechanical means. London, 1842. P. 160 et seq.

† Malgaigne. Thèse de concours. Parallele des diverses especes de taille. Paris, 1830. P. 68.

Digitized by Google

opening made by his dilator is sufficient to admit lithoclasts strong enough to destroy calculi of considerable size.

The Dilator (Figs. 1, 2, 3) is composed of six uniform metallic branches, which are kept together by an India-rubber band when the instrument is closed. Fig. 2 represents the dilator in its natural size, which is twelve millimetres in diameter at the largest part. The vesical end is conical, and is surmounted by a small metallic hood, which covers the free extremities of the six branches, and fits in the groove of the staff. In the centre of the branches there are two spheres attached to a stem, which extends from the hood at the vesical extremity, to terminate by a screw-thread in the handle. When the handle is turned the spheres are pushed forward from their concealed position, and the instrument is gradually developed to twenty millimetres (Fig. 3). Originally Mr. Dolbeau covered the dilator with a rubber stall, but now he thinks this precaution is unnecessary.

The Instruments necessary to perform perineal lithotrity are: A broad, deep and centrally grooved staff; a strong, straight lancet-pointed bistoury, such as that used in median lithotomy; a six-branched prostatic dilator; three or four lithoclasts of different shapes and strength; two or three pairs of small, straight and curved forceps; a scoop; and a long-nozzled rubber syringe. Mr. Dolbeau advises that in addition to the above-named instruments, the following should be within reach in case unforeseen difficulties should occur during the operation: A beaked bistoury, a single or double lithotome, a blunt gorget, strong forceps, and a *canule-à-chemise*.

Operation.—The description Professor Dolbeau gives of his operation is substantially as follows:—It comprises three principal steps; 1st. The opening of the bladder; 2d. Lithoclasty, or fragmentation of the stone; 3d. The extraction of the debris.*

1. *Opening of the Bladder.*—The patient, having been properly prepared, is etherized and placed in the lithotomy position. The staff is introduced and confided to the principal assistant, who holds it firmly and perpendicularly in the median line and well hooked under the pubic arch. An incision, two centimetres (about $\frac{13}{16}$ of an inch) in length, is made in the median raphé, extending to the anal margin and involving the skin and superficial fascia. The deep fascia is next incised; the left index finger-nail is then pressed into

* Dolbeau. De la Lithotritie Périnéale, ou nouvelle manière d'opérer les calculeux. Paris, 1872. P. 47 et seq.

Digitized by Google

Fig. 1.

Fig. 2.

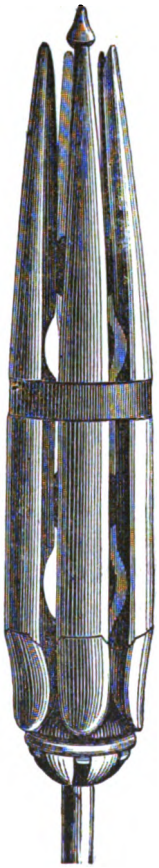


Fig. 3.

Dolbeau's Dilator.

Digitized by Google

Digitized by Google

Digitized by Google

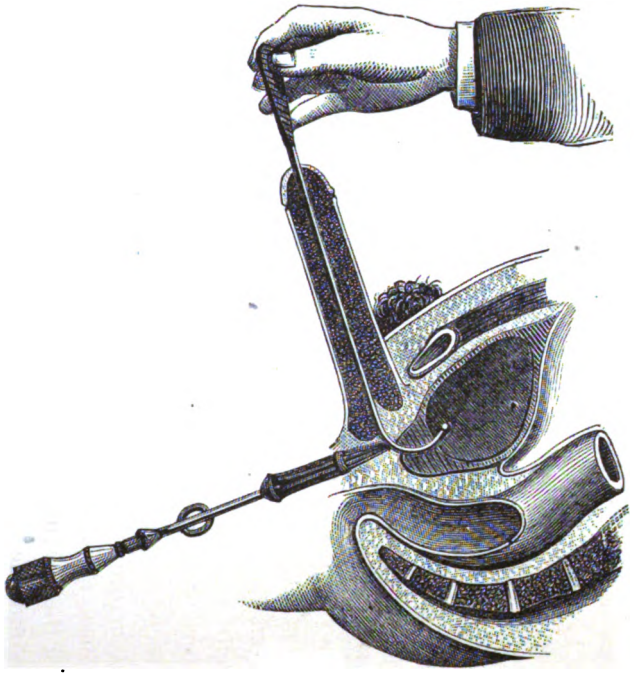


Fig. 4.

From Dolbeau. Showing the relative position of the staff and dilator, during the first step of dilatation.

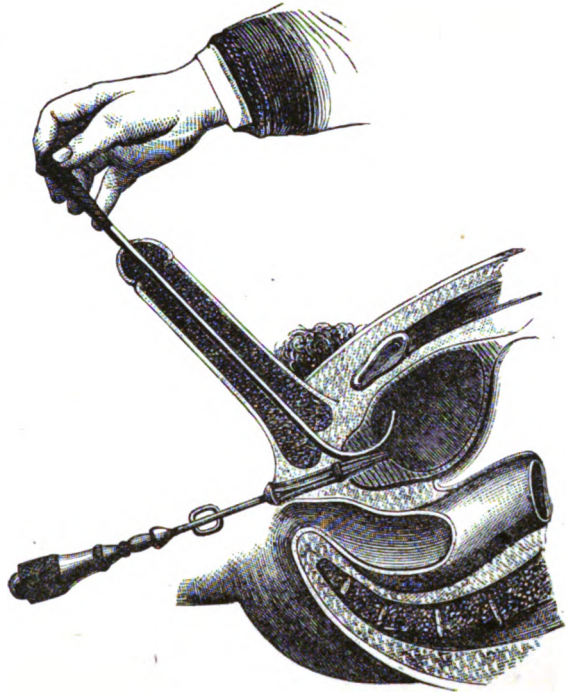


Fig. 5.

From Dolbeau, Showing the relative position of the staff and dilator, during the second step of dilatation.

Digitized by Google

the groove of the staff, and the membranous portion of the urethra is punctured with the knife, care being taken to avoid the bulb on one side, and the rectum on the other. The urethral incision is only five or six millimetres in length. I see no reason why the knife should not be plunged into the urethra through the skin, as in Allarton's operation.

Dilatation.—In most cases the dilator can be introduced into the bladder at once; but Mr. Dolbeau prefers, for safety's sake, to make dilatation in three steps, the first of which consists in inserting the point of the dilator into the groove of the staff, and fixing it in a direction perpendicular to the plane of the perinæum. (Fig. 4.)

The staff is held firmly in position, that there may not be the slightest deviation of either instrument, and that it may serve as a fulcrum for the dilator; and, during dilatation, the assistant should constantly resist the strain arising therefrom. The dilators should be opened very slowly, although during this step scarcely any obstacle is encountered, as the tissues yield readily, and the passage is made immediately.

Methodical divulsion of the urethra, and the crowding back of the tissues from the skin to the urethral rent being thus secured, there is an artificial canal large enough to allow the instrument, after it is closed, to enter the prostatic urethra (Fig. 5); then begins the second step of dilatation, in which the surgeon, holding in his right hand the dilator, in contact with the groove of the staff, takes the handle of the latter in his left hand and depresses it to an angle of about one hundred and thirty degrees (Fig. 5). This depression of the staff causes the point of the dilator to be carried nearer the vesical neck. In this new position of the instruments the perineal wound is again slowly dilated.

At the termination of the second step, the dilator is closed and the staff removed, but the former is left in position, that the third and last step of dilatation may be accomplished. The dilator may have to be employed two or three times, in order to make the perineal wound sufficiently patent.

In the third step, also, the introduction of the dilator and its opening must be very slow. Often only its conical extremity can be engaged in the neck of the bladder; when this happens, no violence or haste must be used. It is sufficient to dilate very slowly, then to close the instrument, when it will be comparatively easy to introduce it into the bladder. The dilatation of the vesical neck is then proceeded with, always slowly, stopping each time there is

Digitized by Google

any great resistance. After the dilator is developed to its fullest extent (20 millimetres), it is gently withdrawn, its six branches remaining open (Fig. 6).*

Mr. Dolbeau, to be more explicit, says that the surgeon should dilate in accordance with the degree of resistance he finds. In some cases there is no resistance of any account, while in others it is with the greatest difficulty that the branches of the instrument can be opened. In such instances it is necessary to proceed with the greatest caution. During the whole manœuvre the dilator frequently touches the calculus; this is very important, as it makes the surgeon certain that the instrument has entered the bladder, and not a false route. At the conclusion of the last step of dilatation, Mr. Dolbeau is in the habit of introducing a small, straight lithotomy forceps, to ascertain the size and hardness of the stone. If the calculus does not exceed two centimetres in diameter, he extracts it entire, otherwise he proceeds to lithoclasty. In some cases he has been able to reduce to fragments, with this small forceps, large phosphatic stones. After dilatation in the cadaver, he has uniformly found a longitudinal rent, extending from the puncture in the urethral floor to the right of the utriculus, but never farther back, the vesical neck being always simply dilated. He seems to prefer divulsion of the membranous urethra to its complete division with a knife, perhaps with the idea that a free incision to the apex of the prostate might lead to extension of the rent to the neck of the bladder. He has observed that the vesical neck did not usually retain for a very long time the degree of dilatation to which it had been subjected. This tendency to contraction has also been noticed after median lithotomy; in many instances the patients have been able to pass urine at will on the next day, and sometimes within a few hours.

2. *Lithoclasty.*—This step of perineal lithotrity has, according to Mr. Dolbeau, for its principal and essential basis, the following proposition: The great danger in the operations of perineal lithotomy is the extraction of a calculus too large, considering the restricted dimensions of the neck of the bladder. Security then resides in fragmentation of the stone. In this manner the fragments extracted are proportioned to the canal by which they pass, and it

* Dr. E. Krackowizer, of New York, has twice, at my suggestion (1874), employed hydraulic pressure, instead of Mr. Dolbeau's dilator, to make dilatation of the prostate and vesical neck, with entire success. The small but strong rubber tube of Dr. Moldsworth was easily introduced through the wound, and was forcibly expanded with water thrown in by means of a metallic syringe, the piston of which is moved by screw power. In about two minutes, in each case, the vesical neck was dilated to the required extent, when the stone was seized, broken up, and all the fragments extracted.—(J. W. S. G.)

Digitized by Google

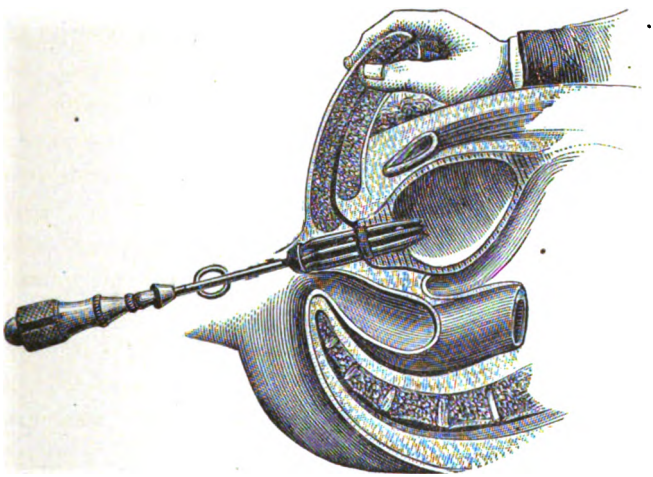


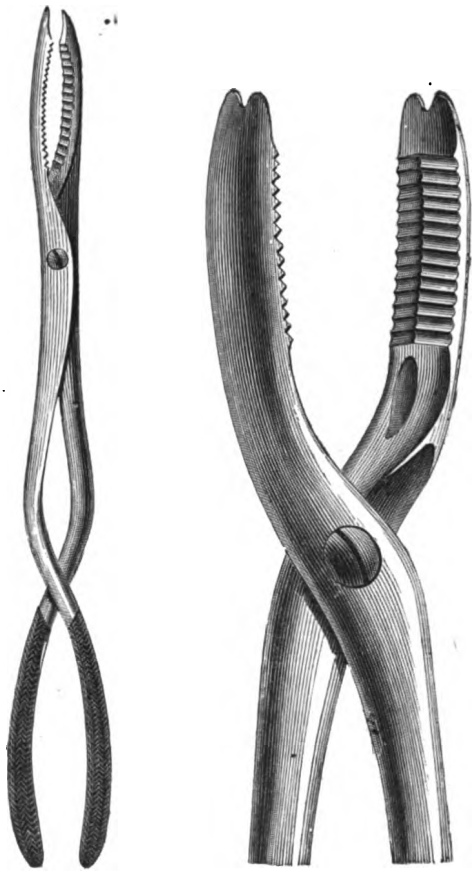
Fig. 6.

From Dolbeau. Showing the third step of dilatation.

Digitized by Google

Digitized by Google

Digitized by Google



SHEPARD—DUDLEY, N. Y.

Fig. 7. *Fig. 8.*

Dolbeau's Lithoclast.

Digitized by Google

may be said that, as a rule, calculi which exceed two centimetres should be broken up.

"Fragmentation of the stone has been theoretically accepted by numerous surgeons who still practise lithotomy. However, they reserve lithoclasty exclusively for very large stones. With the majority of operators, lithoclasty intervenes only after efforts at traction have failed to bring out the stone through the vesical neck, already incised in various directions. Extreme distension of the vesical neck is to be dreaded, as it is very often accompanied by more or less deep lacerations."*

Mr. Dolbeau considers lithoclasty through the perinæum as a difficult and laborious manœuvre, partly on account of the instruments used for the purpose. He states that fragmentation of stones by a perineal wound with the curved lithotriptors is always very difficult, and sometimes impossible; and advises young surgeons to rely little upon these curved instruments, although theoretically they seem to offer great resources to the combination of lithotomy and lithotripsy. He used, in his early operations, a short and strong curved lithotriptor, but has since given it up for the forceps (Figs. 7, 8) described below.

In his opinion the best lithoclast is a forceps which seizes the stone with ease, and at the same time offers sufficient resistance to break it. The problem he had to solve was the possibility of making a very powerful forceps of a relatively small size. He has succeeded in having such an instrument constructed. The new lithoclast, he says, is a small lithotomy forceps whose handles are made like those of the English forceps. The entire length of the instrument (Fig. 7) is thirty-eight centimetres. The handles are much longer than those of ordinary forceps, and can be further lengthened by a simple mechanism. The beak is such that, when closed, it can pass through a canal of two centimetres in diameter. The instrument is made of well-tempered steel, the jaws are thick and short (six or seven centimetres), and their power very great on account of the situation of their articulation. There are two strong teeth at the extremity of each jaw (Fig. 8), that large calculi may be gnawed and destroyed from the circumference towards the centre, and sufficiently reduced in size to be seized and broken up. The male blade of the lithoclast has a prominent longitudinal crest (Fig. 8), and the female is slightly concave, and has small peripheral teeth to prevent the stone from slipping away.

* Dolbeau. De la lithotritie perineale, etc. Paris, 1872.

Digitized by Google

Mr. Dolbeau's instrument is susceptible of improvement in the following particulars: The jaws should be shortened, and the articulation and disposition of the handles should be slightly altered, in order to prevent over-distension, and perhaps rending of the vesical neck, when the instrument is opened. These defects exist in the instrument "definitely adopted" by Mr. Dolbeau, and though they can be easily remedied, it occurred to me that the instrument whose handles would retain their parallelism near the articulation when the jaws are open, would be least likely to contuse, distend or tear the vesical neck, and I think I have found the right method of fulfilling these conditions. My lithoclast (Figs. 9, 10, 11), modelled after Mathieu's double-lever urethral forceps, while it is smaller than Mr. Dolbeau's forceps, is quite as strong, and is capable of fracturing the hardest calculi. The jaws are shorter than those of his instrument, and can be opened to the extent of two inches, without in the least augmenting the calibre of the shaft. Fig. 9, reduced in size, shows the instrument closed for introduction; Fig. 11 represents it open for seizure of the stone; and Fig. 10 gives an idea of the natural size of its vesical end, which at the largest part is 42 millimetres in circumference. The entire length of this forceps is eleven inches.

I have since succeeded in constructing an improved lithoclast (Fig. 12), both jaws of which can be simultaneously opened by a slight addition to the mechanism of my first forceps (Figs. 9, 10 and 11), and whose beak is curved so as to enable the surgeon to seize a calculus hidden behind the pubes. The circumference of the vesical end at the largest part is forty-five millimetres, and consequently smaller than Mr. Dolbeau's instrument.

The manner of breaking up the stone with Mr. Dolbeau's forceps is as follows: After having ascertained the volume of the stone with the small lithotomy forceps, this instrument is removed, and the lithoclast, previously oiled, is introduced slowly and cautiously through the artificial canal into the bladder; the stone, if very large and hard, is gnawed by the teeth at the extremity of the lithoclast, so that it is destroyed from the circumference toward the centre, and when it is sufficiently reduced in size, it is caught between the jaws and broken up, considerable force being sometimes required to fracture it. Then fragment after fragment is seized and broken into portions sufficiently small to be extracted without injury to the vesical neck. When the calculus is not very hard and does not exceed an inch in diameter, it may be at once seized and crushed.

Digitized by Google

Fig. 9.

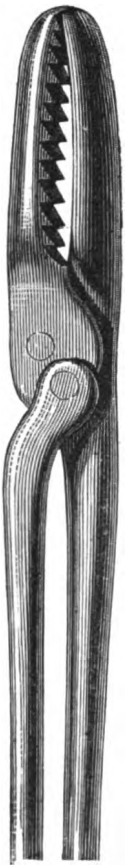


Fig. 10.

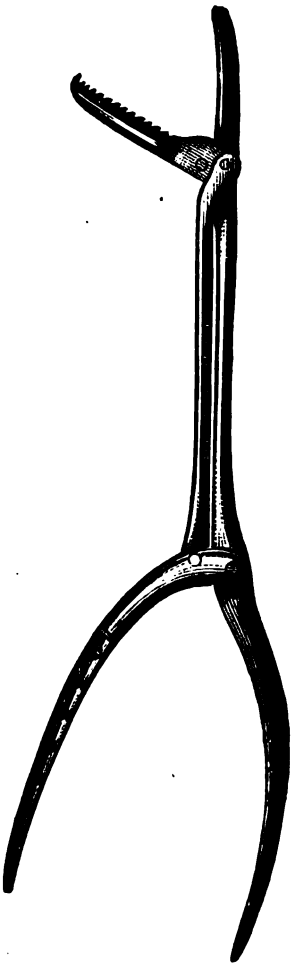


Fig. 11.

The author's lithoclast for perineal lithotrity.

Digitized by Google

Digitized by Google

Digitized by Google

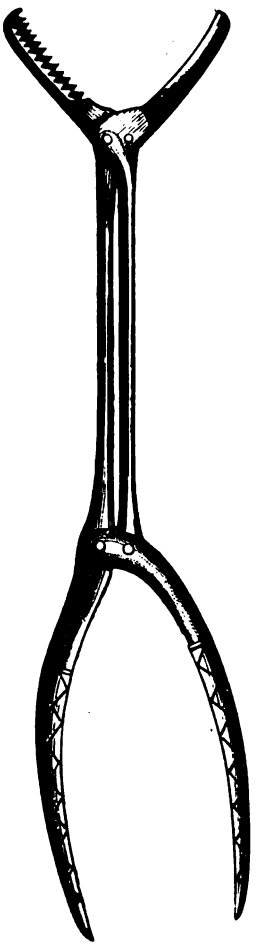


Fig. 12.

The Author's curved Lithoclast.

Fig. 13.

From Dolbeau, showing the lithoclast in position, with a calculus between its jaws.

Digitized by Google

Mr. Dolbeau was once able to reduce, at one crushing, such a stone to fifty-three fragments, all of which were small enough to be successfully extracted. Fig. 13 represents the lithoclast in position with a stone between its jaws. Large and soft stones can often be fractured with an ordinary pair of strong lithotomy forceps. In one instance, recently, I was enabled to crush a calculus measuring one inch and a half in diameter with such an instrument. Fragmentation, with my lithoclast, is done in the same manner.

3. *Extraction* is made partly with the lithoclast and small forceps, and partly with the scoop. The rules that apply to extraction after lithotomy should here be observed. It is, says Mr. Dolbeau, by a series of fragmentations and explorations followed by extractions, that the bladder is finally relieved of the calculous matter. He advises the injection of cold water into the bladder from time to time during these explorations, not for the purpose of washing away calculous debris, which would be impossible, but to control bleeding, and to render certain fragments more accessible. He insists that the patient must not be left until it is certain that there is nothing in the bladder, that therefore several explorations should be made with the small forceps through the wound, and also with a metallic sound of short curve introduced by the urethra.

The advantages claimed for the operation are: that the situation of the small wound exposes the patient to very little risk of hæmorrhage; there is less suppuration, and the patient is less exposed to its bad effects, and in fact that it possesses all the advantages of median lithotomy without its disadvantages. Mr. Dolbeau urges that perineal lithotrity has not been with him an operation of choice, but of necessity; that he has resorted to it only when lithotripsy by the natural route has been contra-indicated, and where the larger incision in perineal lithotomy might prove serious.

Among the accidents of perineal lithotrity he once observed complete retention of urine, a circumstance which went to show that the vesical neck had not lost its power of contraction. He states that pain in the hypogastrium, and vesical and rectal tenesmus have not been infrequent consequences of the operation—the vesical tenesmus, in some cases, having been obstinate and annoying. He has never had to contend with severe bleeding. Rigors have sometimes occurred within the first few hours, rarely later. The supervention of a chill in three or four days may be regarded as a bad omen, perhaps the precursor of pyæmia. He has never had a case followed by permanent fistula. The wound has usually healed in from two to three weeks.

Digitized by Google

The after treatment is the same as in lithotomy. Vesical and rectal tenesmus may be controlled by opium and belladonna given by mouth and in suppositories. A full dose of quinine and aconite should be given as soon as the patient can swallow, and it is well to take the precaution to administer a similar dose a moment before the operation. The administration of diluent drinks, the daily ablution of the bladder, and absolute cleanliness are not to be neglected.

Results of Perineal Lithotrity.—Taking into account the conditions which render the operation necessary, *i. e.* a large calculus, an irritable bladder, and other circumstances which contra-indicate lithotomy or lithotripsy, the results exhibited below may be considered eminently satisfactory. From 1863 to 1872, Prof. Dolbeau performed thirty operations with five deaths, or 1 in 6. In his first series of twenty-two cases he lost only two patients.

He gives the following analysis of these twenty-two cases. The ages ranged from 3 to 72. One case was a child 3 years old; three cases were subjects from 10 to 20 years; three cases from 30 to 40 years; four cases from 50 to 60 years; eleven cases from 60 to 72 years.

The chemical composition of the calculi was: 9, phosphatic; 8, uric acid; 4, oxalate of lime; 1, cystine. Nearly all of them were large, and in two cases were multiple.

In more than half of the cases the stone was too large or too hard to permit the application of ordinary lithotripsy, which had been tried, but could not be continued owing to attacks of urinary fever.

In several cases lithotripsy was impossible, or would have been extremely difficult on account of organic complications, such as stricture of the urethra, enlarged prostate with retention of urine—in one case there was an enormous prostatic valvular outgrowth with severe cystitis.

In two cases there were multiple calculi, a circumstance which, added to other contra-indications, led to the abandonment of lithotripsy.

In the case of the child 3 years old, the operation was indicated by the presence of a large and hard (oxalate of lime) calculus.

My own experience in this operation is limited to three cases, which terminated favorably, and I have no hesitation to recommend it as preferable to median lithotomy with fragmentation of the stone.

Digitized by Google

ARTICLE XIII.

Obituary notice of Doctor PLATT WILLIAMS.* By THOMAS HUN, M.D.

Doctor PLATT WILLIAMS was born September 17, 1784, in Huntington, Long Island. His father, Nathaniel D. Williams, removed during the boyhood of his son to Lansingburgh, and was prominent as an extensive grain and produce merchant. He lost, within a few weeks, by the failure or dishonesty of shippers to foreign ports, a very large sum. He retired with the remnant of his fortune to Savannah, Ga., where he purchased a large plantation and managed it with hired labor. This experiment was successful, and he overcame the prejudices and gained the esteem of those who had opposed and discouraged the attempt. He died suddenly in the fiftieth year of his age, and was buried in Savannah.

At this period PLATT WILLIAMS was pursuing his studies at Williams College, from which he graduated in 1804. He then commenced the study of medicine in New York. After the completion of his medical studies, he came to Albany, and entered on the practice of medicine as partner of Doctor Elias Willard, a highly respectable practitioner of that day.

At the commencement of the war in 1812, he received from Governor Daniel D. Tompkins, the appointment of surgeon of the Second Regiment of Riflemen. A part of this regiment was detailed for service on the Niagara frontiers, and six companies were sent to Plattsburgh, with an assistant surgeon.

At the close of the war Dr. WILLIAMS returned to private practice in Albany, and joined the County Medical Society in 1816. Two years later, upon the recommendation of Major William J. Worth (afterward Major General Worth), he was appointed by Dr. Lovell, surgeon general, post surgeon of the cantonment at Greenbush, a position he continued to fill with marked satisfaction until the post was abandoned in 1822. During this time he continued his private practice in Albany.

In 1828 he was elected President of the County Medical Society, and in the same year was elected a permanent member of the State

* Many of the facts of this sketch were kindly furnished by Mr. Charles P. Williams, of New York; I am also indebted to a biographical sketch of Dr. Williams, published by the late Dr. Sylvester D. Willard.

Digitized by Google

Medical Society. He was afterwards treasurer and then secretary of the Society for many years.

He continued the practice of medicine, occupying a high rank in the profession until 1845, when, to the great regret of his friends and patients, he determined to withdraw from practice and return to Alder Creek, Oneida county, on the banks of the Black River, about ten miles from Trenton Falls.

The reason for this determination was, that he found his sight to be impaired by the formation of a cataract on both eyes, and he was unwilling to risk his professional reputation, and the safety of his patients, by continuing to practice while laboring under this infirmity.

At Alder Creek he had inherited and acquired by purchase a large tract of land on which he settled, and by his intelligence and enterprise contributed greatly to the development of this region. The common road changed to a plank road, and was succeeded by a rail road The completion of the Black River canal; the erection of mills and tanneries, were improvements hastened and brought about by his settlement in this locality. He presented to the canal commissioners the practicability of furnishing water during the dry season to the Erie canal, by damming the forest lakes, and retaining a supply of water for use when required. His suggestions were at first treated lightly. He then made a survey at his own expense, and fully established the correctness of his plan. It was at length adopted, and is now in successful operation. By his personal influence he contributed to the instruction and culture of the people of that region.

His taste for reading and for gardening furnished him occupation and amusement during his residence at Alder Creek. His sight continued to fail, but this failure was so gradual, that it was only a few years before his death that he was unable to read. After this he was an attentive and eager listener, and kept himself to the last well informed of the current events of the day, and deeply interested in them.

At the age of eighty he had a fracture of the neck of the femur, which confined him to his bed for several months. It was feared that he would never regain the use of his limb, but by the use of moxas, galvanism and frictions, he so far recovered as to be able to walk a mile or more without inconvenience. In 1867 his growing infirmities caused him to remove to New York, that he might be with his children. At this time his memory was retentive and

Digitized by Google

accurate, his mind was clear, and his advice highly prized by his family and friends. After a time his strength failed, and he sank rather under a gradual decay than disease, his mental faculties remaining clear and active. He was aware that his end was approaching, and he suffered much during the last few days of his life. He refused all anodynes and stimulants lest they should deprive him of consciousness at the approach of death. December 8, 1870, he died in the full possession of his mental faculties, sustained by the presence of his family, and by an assured religious hope.

This is necessarily an imperfect sketch of the quiet and unobtrusive life of Doctor Williams. His career, like that of most professional men, was unmarked by any great events, but presents rather a steady and unpretending devotion to duty. He was devotedly attached to his friends, and was always pleased to meet them and converse with them. He was faithful and assiduous in his attention to the sick, and to this day many of his old patients speak of him with affection and gratitude. The writer of this sketch was, in his early boyhood, treated by him with tenderness and affection during his pupilage and short connection with him in business; was indebted to him for professional instruction and guidance, and during all his life for sympathy and encouragement.

Digitized by Google

ARTICLE XIV.

Obituary notice of Doctor PETER VAN OLINDA. By A. VAN DERVEER, M.D.

Among the names of those who, during the last year have closed their life-work, and passed into the mysteries that await us beyond the tomb, we find that of Dr. PETER VAN OLINDA.

He was born December 28, 1797, in Charleston, Montgomery county, N. Y. His father was a farmer, and he spent his early years at home, assisting in all the labors pertaining to that kind of a life. Evincing a taste and talent for study, opportunity was given him to obtain all the knowledge he could from such schools as the country afforded. In addition to this, he pursued the study of Greek and Latin under the instruction of his pastor.

In 1812 his brother was drafted, but Peter went as his substitute, although at that time only fifteen years of age. He was sent to Plattsburgh, and after remaining there two months, returned home.

In the fall of the same year he was examined, and obtained a license (as it was then called) to teach. The five succeeding years were spent by him in teaching in various places in his native county.

November 17, 1817, he began the study of medicine with Dr. Wendell, of Albany. January 9, 1821, at its annual meeting, he was admitted a member of the Albany County Medical Society. In 1825 he was chosen treasurer of the society, and in 1827 secretary of the same. In 1837 he was elected delegate to the State Medical Society, and the same year was chosen its secretary, which office he held until, in 1856, his failing health compelled him to resign. The duties of this office he performed to the entire satisfaction of the society, and on retirement therefrom the following resolutions were unanimously adopted:

ALBANY, *April* 3, 1856.

At the last annual meeting of the New York State Medical Society, Dr. Kneeland presented the following:

Resolved, That the thanks of this Society are due to Dr. Peter Van Olinda, for the faithful manner in which he has for so many years served as an officer of the Society, and that the Society regret that from ill health he declines to continue in office.

Resolved, That a copy of this resolution be sent to Dr. Van Olinda.

HOWARD TOWNSEND,
Secretary N. Y. State Med. Society.

Digitized by Google

His active connection with the State and County Societies ceased at this time; although, having been made a permanent member of the State Society in 1841, he was ever interested in the welfare of both, until in November, 1872, death severed the tie.

His feeble health preventing him from attending actively to his large practice, he gradually gave up the care of his many patients, and the last few years of his life were spent in the quiet enjoyment of his home.

His life reaching from the latter part of the last century far beyond the middle of this, embraced many years of useful and honorable labor in his profession.

He was genial and hospitable in his nature, and there are many who can recall the time when his home was one in which all found a warm welcome.

Generous to a fault, he would ever bestow help upon the many who sought his aid, and although at times his confidence may have been abused, we can but love and honor the noble heart that prompted the kind acts his hands performed.

Digitized by Google

ARTICLE XV.

Biographical Memoir of Doctor BARENT P. STAATS. By HIRAM CORLISS, M.D.

BARENT P. STAATS was born in the town of Schodack, Rensselaer county, New York, September 25, 1796. His father was Colonel Philip Staats. His mother's name before her marriage was Miss Anna Van Allstine, of Chatham, Columbia county, New York. Doctor Staats was educated at the Kinderhook Academy, under the instruction of Professor Gleason. He studied medicine and surgery under the instruction of Doctors Wing and Delamater, in the city of Albany, and was licensed by the New York State Medical Society, in the year 1818, after having attended a course of medical lectures in the city of New York, and also attended the New York City Hospital.

He began the practice of his profession in his native town in the year 1818, and continued there until 1821, at which time he moved to the city of Albany, and continued his practice there until his death.

How highly he was estimated by his fellow citizens as a gentleman of sterling integrity and ability is evidenced by the many places of trust and responsibility he was called to fill, an enumeration of which may not be out of place here.

He held the office of supervisor of the county of Albany from 1824 to 1833, and from 1863 to his death. Also the office of alderman of the city of Albany from 1830 to 1833. He was health officer of the city of Albany from 1832 to 1840; physician to the alms-house from 1830 to 1834; member of the legislature in 1834; commissioner of loans from 1837 to 1844; mayor of the city of Albany in 1842; director of the City Bank from 1840 to to 1844; president of the Albany County Medical Society from 1834 to 1837, and president of the Albany County Mutual Insurance Company from 1833 to 1846.

He was commissioner to build and establish the Albany Penitentiary, and physician to that institution from 1848 to his death.

He was vestryman in St. Peter's and in St. Paul's Episcopal Churches twelve years.

He was water commissioner for the city many years, and was "curator" in the Albany Medical College over thirty years, and

Digitized by Google

was never absent from one of the examinations of candidates for the degree of M.D.

He was twenty years consulting physician to the Albany Hospital.

In all of these various positions Dr. Staats was active, faithful and efficient. He had abundant opportunities to accumulate wealth, but his generous and unselfish nature seemed to have higher aims in doing good to others. He always lent a helping hand to every enterprise that promised good to the city and to his fellow-man.

My personal acquaintance with Dr. Staats began in 1815, while classmates in the Medical College in the city of New York, and continued, personally and professionally, until his death. He loved his profession, but was no bigot; hated quackery, and was through his long life an uncompromising temperance man.

Digitized by Google

ARTICLE XVI.

Obituary notice of Doctor JOHN HENRY REYNOLDS. By R. L. ALLEN, M.D.

Dr. JOHN HENRY REYNOLDS was born in the town of Wilton, August 17, 1828.

He remained in the family of his father, Dr. Henry Reynolds, during his boyhood, and attended the public school of his native town. He next pursued an academical course of studies, and then he entered his father's and brother's office, and began the study of medicine. His advancement in medical science was so satisfactory to his father and friends, that they early sought a more important place for him, and finally secured a seat in Dr. March's office, in Albany, N. Y.

Here he remained until he had completed his preliminary studies, and received his diplomatic papers. He then returned to Saratoga county, and entered into co-partnership with his father and brother.

This co-partnership continued through the lifetime of his father. After this a new one was formed with his brother, Dr. T. B. Reynolds, which continued until the day of his demise.

As a citizen, neighbor and common friend, no man stood fairer than he. He was honest, faithful, industrious, kind, benevolent. As a physician he was skillful, attentive, and sought nothing but the cure of his patients. And no road was too long, no storm too boisterous, no labor too hard. His money even was freely given to all who were in distress.

In July, 1862, he resolved to leave his large and important business at home and repair to Fortress Monroe, and enter the Union Army as a volunteer surgeon. He, without delay, entered the hospital, and began his surgical work in the army practice. At this time the weather was hot. The wards of the hospital were crowded to overflowing, and his duties were constant and very laborious. These arduous duties he faithfully discharged, regardless of himself, until at length he was compelled by failing health to resign his army post, and return to his native country practice. But so feeble had he become, that even these old labors were too much for his strength.

On Thursday preceding his death he had been to Glen's Falls, but on his return he was attacked with pneumonia, which terminated fatally on the ensuing Sunday, at 3.30 P.M. He died April 2d, 1870, at the age of 41 years.

Digitized by Google

ARTICLE XVII.

Obituary notice of Doctor Darius Clark. By B. F. Sherman, M.D.

Darius Clark was born in Weybridge, Vermont, April, 1798. He was the youngest of thirteen children, and was left an orphan to the care of his brothers and sisters, before he was eight years old. This duty they faithfully performed, for which he was truly grateful through the whole of his life. At an early age he came with a married sister (Mrs. Weed) to reside in Malone, Franklin county, where, after receiving such education as the village school afforded at that early date, he was put into Mr. Weed's store to learn the business of a retail merchant. In this place he soon became an expert book-keeper and popular salesman; his suavity of manner and stern integrity soon making him a favorite with both customer and employer.

At the age of twenty-one, he astonished his friends by the announcement to them that he was going to leave his present position, and the business to which he had been educated, and commence the study of medicine. To dissuade him from this course he was offered a partnership in the business, but to no purpose; his mind was made up and nothing could change it. His reasons were, that he wanted a wider field for thought, than the weighing of groceries and the measuring of calicoes furnished. He entered the office of Dr. Waterhouse, of Malone, then holding a prominent position in his profession in northern New York, and a professorship in Burlington (Vermont) Medical College.

After pursuing his studies the time required by law, he was examined and received a diploma from Franklin County Medical Society.

Early in 1825 he came to St. Lawrence county, and commenced the practice of his profession in the town of Canton, where he resided until his death, and where his surviving family still resides. Soon after commencing in business, he formed a co-partnership with Dr. Elijah Baker, whose daughter he afterwards married. At the meeting of the St. Lawrence County Medical Society in January, 1826, Dr. Clark became a member and was elected secretary, which position he continued to fill for twenty-five years, and was never but once absent from a meeting in that time.

Digitized by Google

For a number of years he was the only delegate to represent St. Lawrence county in this the parent Society, and was made a permanent member in 1860, and this Society honored itself by so doing. In 1849 he was elected State prison inspector, and in January, 1850, left his professional to attend to his official duties. This was the mistake of his life; for when he returned to his home in Canton, after six years' service for the State, he found his business and his old patients in the hands of younger but not more competent practitioners. His old practice he never regained, although he devoted the remainder of his life to his profession; and this fact, together with domestic sorrows from the loss of an only and beloved son and a daughter, made his last days sad and dreary.

In his family Dr. Clark was a devoted and affectionate husband and father, watching over and nursing an invalid wife with a mother's care and tenderness. As a neighbor, he was loved, honored and respected by all who knew him. In his profession for many years he stood in the front rank in his county, and his counsel was sought by all his neighboring physicians, feeling that the interest of both patient and attending physician was safe in his hands. He never hesitated to give his opinion when asked for, and it was always the result of mature reflection. In his intercourse with younger men in the profession, Dr. Clark was kind, generous and high-minded, for which the writer of this has, on more than one occasion, felt his heart warm towards him.

As early as 1845 he had an attack of hemiplegia, from which he soon recovered; but for several years before his death he suffered from paralysis agitans, which for the last year had rendered him nearly helpless. He died suddenly, from apoplexy, on the twenty-third of January, 1870.

Digitized by Google

TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE

STATE OF NEW YORK,

For the Year 1874.

ALBANY:
CHARLES VAN BENTHUYSEN & SONS.
1874.

Digitized by Google

THE VAN BENTHUYSEN PRINTING HOUSE,
Printers, Stereotypers and Binders,
Albany and Castleton, N. Y.

Digitized by Google

TABLE OF CONTENTS.

ARTICLE.		PAGE.
I.	Medical Society of the State of New York, sixty-eighth annual meeting	3
II.	Anniversary address of the President, Dr. E. M. Moore, of Rochester	41
III.	Injuries which happen to the wrist-joint and to the parts in its vicinity, as results of falls upon the hand. An examination of the evidence on which is based the establishment of the occurrence of luxations at the wrist, and radio-carpal articulations. Also a consideration of the nature of the deformity, of the symptoms and of the treatment of Colles' fracture, with a *résumé* of the literature of this subject, being the Merritt H. Cash prize essay for 1874, by Thomas K. Cruse, A.M., M.D., of Tarrytown	56
IV.	A case of anchylosis of the right temporo-maxillary articulation successfully treated by excision of the condyle, with remarks, by J. L. Little, M.D., of New York	119
V.	Electrolysis in the treatment of stricture of the urethra, by Robert Newman, M.D., of New York	128
VI.	Diagnosis of eye diseases, by C. A. Robertson, M.D., of Albany	155
VII.	Three cases of perineal lithotripsy, by E. Krackowizer, M.D., of New York	168
VIII.	Report of two cases of inversion of the uterus, by James P. White, M.D., of Buffalo	174
IX.	A case of urethrocele; sectio-vesicalis; secondary hæmorrhage, by L. B. Cotes, M.D., of Batavia	185
X.	Hæmoptisis, by J. R. Leaming, M.D., of New York	190
XI.	Pathology of insanity, by John P. Gray, M.D., of Utica	202
XII.	Contributions to the pathology of tumors of the eyeball, with macroscopic and microscopic demonstrations, by H. Knapp, M.D., of New York	225
XIII.	The relations of syphilis to aural disease, by D. B. St. John Roosa, of New York	230
XIV.	Penetrating gun-shot wound of the cranium, with recovery, by A. Van Derveer, M.D., of Albany	233
XV.	A case of acute dilatation of the stomach, by Wm. C. Wey, M D., of Elmira	235
XVI.	A new method of treating malignant tumors by electrolyzing the base, by Geo. M. Beard, M.D., of New York	238

Digitized by Google

ARTICLE. PAGE.

XVII. General principles affecting the organization of quarantine. A paper read before the New York Academy of Medicine, in December, 1873, and, by resolution of the Medical Society of the State of New York, requested for publication in its Transactions. By S. O. Vanderpoel, M.D., Health Officer of the Port of New York.. 243

XVIII. On the transmissibility of yellow fever and cholera in their relations to quarantine, by S. O. Vanderpoel, M.D., Health Officer of the the Port of New York..... 260

XIX. Two unusual cases—meningocele, lipomata, by Jas. S. Bailey, M.D., of Albany..... 281

XX. Memoir of Dr. Richard L. Allen, by T. B. Reynolds, M.D., of Saratoga Springs..... 285

XXI. Memoir of Alexander H. Stevens, M.D., LL.D., by John G. Adams, M.D., of New York..... 288

XXII. List of honorary members of the Medical Society of the State of New York..... 301

XXIII. List of permanent members..... 305

XXIV. List of physicians on whom the honorary degree of Doctor of Medicine has been conferred by the Regents of the University, on the recommendation of the State Medical Society..... 315

XXV. List of persons eligible for election as permanent members..... 318

XXVI. List of persons eligible for election as honorary members..... 321

XXVII. Classification of counties as to the election of delegates..... 322

XXVIII. Presidents of the Medical Society of the State of New York since its organization..... 323

Digitized by Google

SIXTY-EIGHTH ANNUAL MEETING

OF THE

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

FIRST DAY'S PROCEEDINGS.

Morning Session.

The Society met, pursuant to statute, in the Common Council Chamber, City Hall, Albany, at 11 o'clock, February 3d, 1874.

The President, Dr. E. M. Moore, of Rochester, called the meeting to order, and prayer was offered by Rev. Dr. James.

The Inaugural Address was then delivered by the President, as follows:

Gentlemen:

On surveying the field occupied by this Society during the current year in order to reporting upon its condition, I find the evidence of advancement. More interest is felt in the personal society intercourse of the members. The attendance enlarges, and one county society—that of Orleans—has revived its organization, and sends its delegates to this body. Our tables are flooded with print, and by this we are instructed in every direction, general and special. But the contact with knowledge incarnated, can never be substituted. To hear, discuss, inquire, induce mental conditions which the silence of the library does not supply. The future of this Society, in view of this tendency, must be one of increasing importance in the inspiration to professional elevation.

This suggests the question, whether our present organization can receive any amelioration? A child must be helped in order to its living. The same assistance may enervate the man.

I think we occupy, at present, a false position in relation to the State, and I especially refer to our control by the courts.

Digitized by Google

My information is drawn from the publication of the organization of the State Medical Society, in the Transactions of 1869.

The subordination of the medical societies to the courts, in order to the regulation of their membership, appears to me absurd on its very surface. The cause of this is to be found in the dependence on the State, and the advantages accruing from this connection, at the time of forming the Society. A special franchise bestowed upon the profession the exclusive right to practice for emolument. All who did not apply for membership were liable to punishment. This legislation obviously arose from a conviction that irregularity in medicine could be corrected by law. The attempt to prescribe was regarded as a misdemeanor, if not a crime. Hence the machinery of the courts became the natural arrangement. The President of every society must give notice to every one holding himself forth as a practitioner, requiring him, within sixty days after such notice, to apply for and receive a certificate of admission, as member of such society. In case of gross misconduct coming to its knowledge, a special meeting shall be held, to consider the charges. The district-attorney, to whom such charges shall be delivered, must then follow up the matter in the courts, and the judges determine the case. According to their judgment, an order shall be made suspending the accused for an unlimited period, or temporarily, or restoring him to his full rights. The period of study and qualifications for admission into the societies are carefully prescribed. And if any person should gain a foothold and practice without membership through the remissness of the societies, such persons could not recover by suit at law, but shall be deemed guilty of a misdemeanor, punishable by fine or imprisonment, or both, in the discretion of the court by which he shall be convicted. So far the law of 1827. During the session of 1830, it was amended so as to specify the punishment for the offence of irregular practice, by simply making it venal, to be condoned by a payment of not more than twenty-five dollars for each one, the suit to be brought by any person before a justice of the peace; the fine to be paid to the overseers of the poor, and for their benefit. But this shall not be deemed and taken to extend to, or debar any person from using or applying, for the benefit of any sick person, any roots, bark or herbs, the growth and produce of the United States.

Already, in three years, the pains and penalties were found inefficacious to prevent irregularity in the practice of medicine, and a fine for the benefit of the poor, by its humanitarian direction, seemed to relieve the accuser of base motives, and invite the prosecution for the

Digitized by Google

benefit of the community. The exemption in favor of the medical flora of the United States, I strongly suspect, was inspired by the then rising quackery of Thompsonianism, and showed the spirit of relaxation. But while it gave the reins to this specious form, it did not allow collection of debts. They were exempt from punishment, but powerless to enforce claims. In 1844, a still further relaxation took place. The two acts, already cited, with reference to penalties for irregular practice were repealed, and all prohibition to the bringing suit for collection of debt for medical services was removed. Debts of this character were collectable at common law, when the statute was repealed.

As far as the pecuniary relation is concerned, I do not think the profession at present enter any complaint. If one employs a quack, I do not know that any can seriously object to his being forced to pay him. The legislation of 1844, I have some cognizance of. The request came from Monroe county, and I am the surviving member of the committee of three, who proposed it. The senior members were Dr. Read, who firmly attached his name to the method of reducing dislocation of the hip by manipulation, and Dr. Backus, then a member of the State Senate, and who was the prime mover in the establishment of the school for idiot children, at Syracuse. As the junior member of the committee, my position was that of a follower, and not leader in the movement. The inducement to the act was partly the growing democratization of the community, which sympathized with any one who proclaimed his oppression by official legislation—class legislation was becoming more and more obnoxious. This gave the irregular practitioners a theme to harp on, and worse than that, furnished them with a legitimate reason for demanding pay for services not yet rendered. In this country, there happened to be a pestilence of Thompsonianism of marked virulence at this time, and Dr. Backus procured the passage of the act which is now in force. This form of quackery, under the name of Electicism, has still a feeble hold on the community, but I strongly suspect that legislation does little or nothing to prevent or sustain any form of practice, and the law, as it now stands in this particular, is nearly as it should be.

But, while the legislation granting the societies pecuniary privileges has been repealed, thus leaving us without any special relation to the State, the laws regulating membership are still in force, and present some vexatious anomalies. I have already given the sharp points of the law regulating the admission of members. But in 1866, the antecedent legislation was superseded, or rather an attempt was made

Digitized by Google

to supersede it, by giving the power to regulate the membership to the societies themselves.

Thus we had at this time made a long stride towards the establishment of a voluntary association. But the union with the State still remains, and while all special benefits have long since been withdrawn from the statute book, the responsibility and subordination to courts still remains. The statute of 1866 obviously meant to get control of the vital point in our organization—that of the character of membership, but it has failed in doing it. Two notable suits, in the western part of the State, have been brought by men of whose irregularity up to the time of application there is no question; if not up to the very day or month, it still is veracious so to charge it. These suits have been brought to compel the societies of Erie and Genesee to admit to their fellowship men who had offended their regulations in every respect, and the societies have been compelled at great expense to defend themselves from associations they contemn, when no duty to the State has been violated, and where the only punishment inflicted, by refusal to admit, is purely sentimental. The ostracism of a quack by a medical society, as far as I have observed, is but a satire on punishment, often courted as a means of pecuniary gain, by enhancing notoriety. I think no society will refuse admission to a true penitent. Indeed, every motive is pressing to remove the vexatious annoyance of irregularity, and I have known admissions made upon the slightest confessions and professions. Let us look at the results of litigation. I will cite but one case, and this as briefly as possible, but giving the whole case as I understand it. It is brought forward not in judgment, but to illustrate our present position. I have made an abstract of considerable reading, thinking the verbiage of a law paper could be but tedious here.

John L. Curtis, being duly sworn, deposes as follows: I am a practicing physician; have studied medicine for five years, since the age of sixteen, under regular physicians, specifying the same. Attended a full course of lectures at Geneva Medical College, in 1852, and "graduated at the Philadelphia College of Medicine, after having attended two full courses of lectures at that institute, and received my diploma in due form constituting me an M.D. That the said Philadelphia College of Medicine was a regularly incorporated Medical College, and its diploma granted to me as aforesaid, duly authorized me to practice as a physician and surgeon." It further states that he had applied for admission to the Genesee County Society in due form, and was rejected, and upon grounds he was unable to learn,

Digitized by Google

having been refused a copy of the minutes of the proceedings of said Society. He therefore prays for Mandamus to show cause, etc. Hearing was ordered for August, 1870.

The answer of the Society consisted in a denial in due form. That the said John L. Curtis has not been and is not a regular practicing physician and surgeon in Genesee county; that he did not pursue the study of medicine for five years after he had attained the age of sixteen years, as averred; that said Curtis did not during 1852 attend a full course of lectures at the Geneva Medical College; that he did not graduate in 1856 in the Philadelphia College of Medicine, and that the said Curtis did not attend two full courses of medical lectures at the institution last aforesaid; that the said Curtis did not receive from said last mentioned institution a diploma conferring on him the degree of Doctor of Medicine. Also, that said Philadelphia Medical College was irregularly incorporated, and denies that any diploma granted by said college, authorized him to practice as a physician and surgeon in the State of New York, or elsewhere; that the said Curtis did not exhibit proofs of qualification, or that application was made in due form. The Genesee County Society alleges that the said Philadelphia Medical College is and has been for many years a defunct institution, and that for many years preceding its demise, and preceding and during the year 1856, said institution corruptly granted and sold diplomas to divers persons, purporting to certify as to the qualifications of, and to authorize said persons to practice medicine and surgery, without requiring of such persons to take the regular and customary course or courses of lectures at said institution; that such diplomas were sold for money, and without any regard being had to the term of attendance upon lectures or the qualifications of the persons to whom the same were granted. Also, that said Curtis did not attend the lectures the required time, and that the diploma is fraudulent and invalid. The Genesee County Medical Society further alleges that it is regularly incorporated, and has all the powers and rights as granted by law for the government of its members; that in virtue of such powers it adopted by-laws, among which are the following:

"It is derogatory to the dignity of the profession to resort to public advertisements, or private cards or handbills, inviting the attention of individuals affected with particular diseases; publicly offering advice to the poor, gratis, or promising radical cures, or to publish cases and operations in the daily prints, or suffer such publications to be made; to invite laymen to be present at such opera-

Digitized by Google

tions; to boast of cases and remedies; to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

"Equally derogatory to professional character is it for a physician to hold a patent for a surgical instrument or medicine, or to dispense a secret nostrum, or give certificates attesting the efficacy of patent or secret medicines, or in any way promote the use of them."

And the said Genesee County Medical Society alleges that the said Curtis did for several years last past, and still does, knowingly violate said by-laws; that the said Curtis has hitherto invited, and still invites, by public advertisement, by private cards and by handbills, the attention of individuals afflicted with particular diseases, etc., and as having secret remedies; and that he still publishes in the public prints; also, that he prepares and sells secret nostrums. For these reasons we hold him ineligible to membership in the said Genesee County Medical Society.

Wherefore said Society insists that said Curtiss ought not to have or maintain his aforesaid writ, and prays that the same may be vacated and dismissed with costs of these proceedings.

Counsel on behalf of Curtis moved that the allegations of the Society be mostly stricken out on the ground of their immateriality, and that it also be ordered to amend by supplemental proof of the fraudulent character of the diploma, and evidence of the mode in which he had failed to comply with the laws of the State of New York.

Justice MARVIN—Erie term, November, 1870.

"I think the defendant has no right to present the issue, that the Philadelphia College of Medicine is, and has been for many years a defunct institution. It is not alleged that such institution had *ceased to exist*, prior to the time the relator alleged he received from it a diploma."

"Nor has the defendant a right to raise the issue that that institution corruptly granted and sold diplomas. This may well be without affecting the validity of the relator's diploma. It is alleged in another place, that the relator's diploma is fraudulent and void. This presents the true issue."

"I think, also, that the defendant has no right to retain in the answer, the matter relating to its by-laws, and the conduct of the relator touching such by-laws. It is not necessary to discuss the question now, as to the validity of these by-laws, or whether, if the relator

Digitized by Google

after admission, shall violate them, he can be lawfully expelled. It is enough to say, that these by-laws are not binding upon him. It may be when he becomes a member of the Society, and subscribes to the by-laws, that he will at once conform his conduct to them. If he should then violate them, the question of expulsion will arise."

Justice Marvin further says, "that he doubts whether the court, on the trial, would receive evidence of fraud under an allegation so general." He therefore grants the motion requiring them to amend.

Motion to strike out portions of the answer granted, and also that that part of the answer alleging the diploma to have been fraudulently obtained, to be made more definite, with costs.

The counsel for the Society urged that a corporation must of necessity possess, and may exercise, powers for its own protection, of which the exclusion of unworthy men from membership is most important. A case where Justice Cowen held diverse opinion is quoted. In it he says: "I incline to think that a society may, prior to the admission of the candidate in all cases, inquire and satisfy themselves whether any of the causes exist, for which they might prefer charges against him, and on concluding in the affirmative, may refuse to admit him as a member."

I have endeavored to condense the case so that the pith of the matter may be seen at once. And one of the striking things is, that the judges seem to have the failing of disagreeing, so often charged upon another profession. I bring forward this case, not to express any opinion on its merits whatever, much less to criticise the opinions of judges, but to call attention to the false position in which we are placed. If it is a coming fashion for irregular practitioners to advertise themselves by law-suits, and, still worse, if it is law sustained by the courts, that we must admit any one who chooses to come, and we have no control over the matter until they are members of our Societies, I think some movement should be initiated by this body to rectify the law, or repeal it altogether, and allow us to organize as a voluntary body in which no legal technicality can prevail over right and common sense. It has occurred to me as a serious question, whether a man, after expulsion, may not advertise freely for a while, and then, having reaped the benefits of notoriety, settle his account with the newspaper, and gravely knock at the door of the Society, and insist on admission on the ground that he has ceased his irregular practices.

Let me ask, of what possible benefit is our connection with the State through the special legislation? It seems to me that it imposes

Digitized by Google

burdens of a grievous nature without any corresponding relief. The old thought of exclusive rights has long since passed away. It never was aught but a dream, and can only prove a delusion and a snare. We have been, in virtue of the control of the State, relieved of the burden of producing our Transactions in print. It seemed to us a very important matter. But it sinks into insignificance as compared with the loss of control in our Society, and last year the publication of our Transactions was denied. From all sides has come up a cry for the publication, a good evidence of the growing importance of the Society. Many county organizations have passed resolutions, all tending towards assistance in the publication. Some propose to pay their quota; others subscribe definitely for so many copies.

In order to test the question in a definite manner, I sent to the Western counties a postal card requesting subscriptions to pay the expense of printing the Transactions. It was directed to the members of the medical societies individually, in the following manner: Erie, Chautauqua, Cattaraugus, Niagara, Livingston, Ontario, Genesee, Allegany, Seneca, Steuben, Wyoming, Yates, Chemung, Cayuga and Chenango. The names were copied from the Medical Register. The Society of Orleans was but just organized. Monroe had passed resolutions proposing to pay its share during the summer. Onondaga had done the same, and Wayne had also definitely agreed to take twenty-five copies. To these no cards were sent. Thus the whole of Western New York was interrogated. The result has been most gratifying; the response has been immediate and large.

To five hundred cards there have been one hundred and forty replies from individuals. But this by no means represents the answers, for just before the issue the semi-annual meeting of some of the societies had been held, and without the stimulus of my postal card they had adopted resolutions to pay their proportionate shares. From the city of Buffalo I had only about a half dozen replies. This can only be accounted for by the fact of their having taken action in the Society. I think the question of publication can be easily solved.

There is another fact of organization which involves what appears to me manifest injustice. I do not propose, however, to go over ground which has been traversed so well by my predecessor, Dr. H. W. Dean. The facts from which his conclusions are drawn may be found on page 355, Transactions 1866, and are these: The number of permanent members in the districts are in unequal proportions; while of the 242 permanent members of this Society, says Dr. Dean, 61 are in the Southern District, making one in 21 of the medical

Digitized by Google

gentlemen in that district. Of the 181 permanent members in the remaining districts of the State, the proportion is as one to twelve. By the term "Southern District," he includes the First and Second Senatorial. I do not believe that the proportion has grown less unjust by the lapse of time, but more so. I bring forward these grave and fundamental difficulties, in the belief that the amendment of error and compensation for wrong always enures to the good of those who perform such duties, and recommend them to your attention.

The PRESIDENT announced the following committees:

On Credentials.—Drs. Charles E. Rider, Robert Newman and G. L. Halsey.

On Arrangements and Receptions.—Drs. J. V. P. Quackenbush, Wm. H. Bailey and W. S. Ely.

Business Committee.—Drs. S. O. Vanderpoel, H. D. Didama and Harvey Jewett.

On Ethics.—Drs. Thomas Hun, E. R. Squibb and D. B. St. John Roosa.

Dr. J. G. ADAMS, of New York, moved that a committee of three be appointed to take into consideration the suggestions and recommendations in the President's inaugural address. Adopted.

The SECRETARY read the report of Dr. Samuel Hart, of Brooklyn, as delegate to the Rhode Island State Medical Society.

Dr. S. O. VANDERPOEL read a paper on "Transmission of Yellow Fever and Cholera in their Relation to Quarantine." He remarked, that the paper was properly a sequel to one read by him before the Academy of Medicine, in relation to the general principles of quarantine.

Dr. QUACKENBUSH, from the Committee on Arrangements and Receptions, introduced to the President Dr. Wm. G. Wheeler, of Chelsea, Mass., delegate from the Massachusetts State Medical Society, and Dr. A. P. Snow, of Winthrop, Me., delegate from the Maine State Medical Society.

The PRESIDENT presented them to the Society. Both responded to their introduction.

Dr. E. R. SQUIBB—Mr. President: Before the next paper comes up, I would suggest that the one we have just heard is incomplete without the paper which was read by Dr. Vanderpoel, before the Academy of Medicine in New York. I move that that paper be copied in full from the proceedings, with due credit, in order that our proceedings may be complete. Carried.

Digitized by Google

Dr. A. N. BELL—I wanted to remark, that when Dr. Vanderpoel fixed the period of yellow fever on the Pacific at about thirty years, he over stated the period of time. I wish, also, to make a few remarks in this connection upon the suggestion made by him as to how it was transmitted. I took some pains, a few years ago, to trace the course of yellow fever to the Pacific. I satisfied myself that it was never there until after the arrival of the "New World" at Quito, by way of South America, at the time of the great prevalence of yellow fever at Rio Janeiro, about 1850–51, and that the "New World" lost nearly the whole of her crew while on the voyage. The fever appeared in its usual epidemic form. This is very important, I think, in regard to what Dr. Vanderpoel stated as to the usual means of communication by commerce and shipping. I also made a note of what he said in relation to the spread of the disease in thickly populated places. The injury by yellow fever is much greater in those climates where the disease is in the habit of prevailing. We all know that in Bermuda the prevalence of the disease has been very great, and the whole population there, I believe, is only 12,000. Closely connected with this, is the explanation he made in regard to its occurrence in the northern cities, before it appeared in New Orleans. We know that in the history of the commerce of this country, Boston and other cities had connection with the Bermudas, before the southern cities had; but when commerce extended, it carried it further south, and planted it in a more genial climate at the delta of the Mississippi. Dr. Vanderpoel also alluded to the vessels which carried the fever to Havana. I have a very distinct recollection of this case as it was first published. The vessel had been in the port of Havana during the latter part of May, and June, during the prevalence of yellow fever there; but not until she had been seventeen days at sea, did the first case occur. Out of some sixteen, if I recollect right, about half had the yellow fever, and two died. Thirteen days after the occurrence of the last case, she arrived at the Azores; but it had been so long after the occurrence of the cases, that the authorities did not deem it proper to put the vessel in quarantine. As a rule, you know that the crew of a vessel never take any part in unloading the vessel, and so they were discharged from duty, and dispersed throughout the town. A number of men were employed to discharge the cargo, which consisted of sugar. But of those who were thus employed, several were taken sick, and two or three died. The vessel then sailed for some other port within a few hours' sailing. After she had been out in this other

Digitized by Google

port some two or three weeks, the yellow fever broke out on board the vessel, and every person of the crew died, I believe. Another vessel in the same port, and in close proximity, had cases on board. There were no less than forty cases of yellow fever. Here is one of the best proofs we can have that the fever was conveyed by the vessel. She had lain in the port of Havana until she had become contaminated to such a degree, that it not only poisoned those on board, but extended also to other vessels.

I would also add one single word in regard to cholera. Until late years it was received as a part of the history of cholera, that the time of the poison remaining virulent was very short-lived, and that has been the reason given by some why it had never been brought here. And, therefore, vessels coming from so long a distance as this, could not carry with them the germs of the disease.

Dr. Vanderpoel has well alluded to the recent researches in regard to the question, whether cholera is not like yellow fever? I think nothing of more importance, in regard to these points so well raised by Dr. Vanderpoel, than the important question, whether the disease is not transmitted by commerce from one place to another?

Dr. Krackowizer—I wish to add a few remarks in relation to the interesting paper of Dr. Vanderpoel. He says the disease was transmitted from person to person, and at the close of his paper he stated, that in cholera, under certain conditions, a chemical change must occur before the germs can produce disease in such individuals as receive the new-formed germ. Now, if that is so, and I think it is universally admitted, there is a wide difference between the mode of propagating cholera, and the mode of propagating other contagious diseases. If we have a patient with the cholera or small-pox, who has been for a time in a certain room, the fact of another person being brought into the room, exposes that person to the same disease. From this fact, we surmise there is some process by which a change is going on which will produce the disease in this individual. If then, cholera cannot be classed among those diseases that are miasmatic in their origin, and if it differs from those diseases that we have been wont to call malarious diseases, then why designate it by another name, which, we will admit, has so far been on the fence? If the disease is often communicated to other healthy persons by means of germs that have undergone some change, why not call it malarious? I hope the doctor will give an explanation that will satisfy some doubters—myself among the number.

Dr. Vanderpoel—I am well aware that for some years, the defi-

Digitized by Google

nition of the word "contagious" has been very much questioned. I thank the doctor for making the allusion to scarlet fever and yellow fever. I think there is a period in both of these diseases when they cannot be termed infectious. So, too, in relation to cholera: it becomes at times contagious, by a change that we do not understand. I qualified it, however, that it was contagious, not by reason of contact with the patient, but rather by means of something thrown off from the person's bowels. I used the general word "contagious," when transmission would have been a more proper term.

Dr. J. C. HUTCHISON—I was very glad to hear this explanation of the word contagious, for I am not quite assured that the profession will say that cholera is contagious. Neither am I quite sure that they will believe it is infectious. I know opinions of good authorities are very diverse upon this question; and some very heroic experiments have been made in determining this question. It has been carried to the extent of injecting blood of cholera patients. It has been carried to the extent of tasting the discharges from cholera patients: and I think gentlemen who have done so, have satisfied themselves that the disease was neither infectious nor malarious.

In an epidemic form, it visited the southern and western portions of this country in 1847–48. I had charge of a number of patients, and I am sorry to say, that a larger proportion of deaths occured in this State, than anywhere else. During the epidemic, my attention was called to this question, and I was not satisfied that it was transmitted in either way. In 1854, I had charge of a hospital in a state where the disease was prevalent to an alarming extent. I was in the hospital most of the time. There were about twenty or thirty employees. No particular pains were taken to wash them. Water was not so important a disinfectant as it is now. The water used was obtained from a well in the yard, not very far from the privy, and the circumstances combined, it seemed to me, to communicate the disease, yet not a single individual passed from the hospital, having the slightest symptoms of cholera. As far as my own experience goes, I have no reason to think that cholera is an infectious disease.

Dr. SHERMAN—My professional experience does not extend further back than 1854. I remember about that time we had several cases of cholera, one patient dying in my office. It did not extend, however, below Ogdensburgh, on the Canada side. The population was composed mostly of that class who follow the canals and the railroads for a livelihood. The Northern railroad was finished and built in 1850, and of those who were still working upon it, there were many

Digitized by Google

among them similar to those Dr. Vanderpoel has described. They lived in little huts, two-thirds under ground, and their water supply was taken from wells down in the ravine. But, now, in regard to this case in my office: they had the cholera ten miles below, in Canada. One day a party of men left their work and crossed over in a boat. On the way, one of the men was taken sick, showing every symptom of cholera. The men became greatly alarmed, and as soon as they arrived on shore, drove as rapidly as possible to my office. They laid the man down on the sidewalk in front of my office, and drove away. We picked him up and cared for him, but notwithstanding all our efforts, about night he died. The cholera at this time was confined entirely to this class of inhabitants.

Dr. Bell—I think the points raised in reference to the contagiousness of the disease, are quite important ones. It seems to me, however, that the question is simply in relation to the character of the first discharge. I took occasion, a little more than a year ago, to examine from various sources in relation to contagion, and I satisfied myself that the discharges are much more virulent when fresh, than at any other time. In this condition, they are much more likely to become disseminated than when dry.

Dr. A. S. Wolff—I have not myself any conflicting opinions in regard to this disease, cholera. I listened with much pleasure and interest to the paper of Dr. Vanderpoel. In 1851 I started from Calcutta, and on board the vessel was a part of the Forty-sixth Regiment, as well as about seven hundred other men. Very soon after starting out, we had cases of cholera on board, and I was compelled to return, as I had forty men sick. The question as to these discharges being contagious at one time and not at another, is really something very important to know; because, if it is possible that the contagion can be modified by some chemical means, it is very important for the profession to understand it. Now, Dr. Vanderpoel expresses it as his opinion, that at a certain time the discharges are not contagious; at another time they are contagious. I should really like to hear from him upon the question, as to whether the discharges are contagious or not, at all times.

Dr. Vanderpoel—The assertion is pretty positive on both sides. I make the statement upon the ground taken by certain well-established authorities.

The Chairman of the Business Committee read by title the following papers, by Dr. Salvatore Caro, of New York: "Bromide of Potassium for Nausea and Vomiting in Pregnancy," and "Epistaxis

Digitized by Google

and the Sulphate of Quinine." They were referred to the Publishing Committee.

Dr. WM. G. WHEELER, of Chelsea, Mass., read a paper, entitled "A case of Fibroid Tumor of the Uterus." Referred.

The Chairman of the Business Committee announced that Dr. Wm. C. Wey would present, in behalf of Dr. T. H. Squire, of Elmira, a paper entitled "The Prostatic Vertebrated Catheter," merely reading the author's abstract of the conclusions reached, including the principles involved in the use and construction of the instrument.

Dr. VANDERPOEL also read by title a case presented by Dr. Wey, of Elmira, styled "A case of Acute Dilatation of the Stomach," which, with the preceding, was referred to the Publishing Committee.

Dr. VANDERPOEL moved that the Society hold an evening session, to commence at half-past seven o'clock, and the time be particularly devoted to hearing the report of the Committee on Hygiene, and the discussion of the same. Carried.

On motion the Society adjourned to meet at 3 P.M.

AFTERNOON SESSION.

The Society convened pursuant to adjournment, and was called to order by the President, Dr. MOORE.

The first paper read was upon "The Application of Hydrostatic Laws to Therapeutics," by Dr. Chamberlain, of New York. The paper was a description of apparatus to be employed for the application of water, either hot or cold, in the treatment of disease. The apparatus consisted of rubber tubing, with a nozzle and stopcock attached, so arranged that it will conduct fluid from a vessel above upon an object below its level. The apparatus can be used for the treatment of almost all forms of disease and conditions of system which will admit of the use of this remedial agent in any form—removal of foreign bodies from the ear; treatment of diseases of the eye; irrigation of the stomach, etc.

A substitute for the aspirator was exhibited, which consisted of a vulcanite syringe with a stopcock attached to its nozzle, and a piece of rubber tubing to which the nozzle can be closely attached by means of a vulcanite piece, and having attached to its other extremity the ordinary aspirating needle.

Dr. VANDERPOEL, from the Business Committee, announced the reception of communications from the New York County Medical

Digitized by Google

Society, and the Allegany County Medical Society, which were referred to Committee on the President's Address.

Dr. J. P. White, of Buffalo, next read a paper upon "Chronic Inversion of the Uterus." It consisted of the history of two cases of this affection which had been reduced in accordance with the principles published by him in 1856, and subsequently in 1858, and at other times also subsequent to the latter date. No new principles were advanced with regard to the operation. It was believed that the operation is sufficiently established to render confirmatory evidence uninteresting. Dr. White's uterine repositor was used in the operation, for a description of which, reference was made to published Transactions of the Society. One of the cases had been in existence for twenty-two years. Eleven cases have now been reduced by the Doctor, varying in duration from immediately after the occurrence of the accident to that of twenty-two years' standing. The Doctor regards it as being absurd to call this procedure a forcible reduction, as has been done by Dr. Barnes. Gentle, elastic pressure upon the fundus is just sufficient to produce equable traction upon the vaginal connections.

Dr. Quackenbush referred to the use of the probe as a means of diagnosis in these cases, and regarded the only proper means for recognizing the existence and situation of the os uteri to consist in digital examination. The os uteri should be first recognized by the touch. He also did not regard the speculum as being of any service in determining the nature of the affection, for the tissues of an inverted uterus will present no different appearance through the speculum from many other tissues. Another remark with regard to the time at which the operation should be performed. He was of the opinion that duration was not an element of consideration with regard to the possibility of reduction; and that it is just as difficult to reduce a uterus that has been inverted five years as it is to reduce one that has been inverted fifteen years. It may perhaps be more easy to reduce an inverted uterus after the climacteric period has been passed, than previous to that period. The Doctor also referred to the terms acute and chronic, but regarded the terms recent and chronic as being more expressive of the true condition of affairs.

Dr. Graves, of Corning, remarked that he was unable to draw the line between acute and chronic inversion of the uterus, as referred to by Dr. White. He referred to two cases which he had had, and which he had called acute because they occurred immediately in con-

Digitized by Google

nection with delivery. He also referred to two other cases which had been of three and five years' standing, and he had called those cases chronic. In all those cases the uterus was restored to its proper position without difficulty, and no untoward symptoms followed the operations.

Dr. WHITE remarked that he would regard those cases as *acute* which occurred previous to the completion of the process of involution; while those cases which occur subsequent to this period he would regard as *chronic*. He also believed that the danger and difficulty of the operation was greater immediately after delivery than when it had been in existence for twenty-two years. Duration was not regarded as having any influence upon the operation other than that just referred to. Dr. White alo remarked that he would not regard the speculum as essential in diagnosis, and in his cases was only used to examine the condition of the os subsequent to the operation. He also agreed with Dr. Quackenbush in his remarks, that the sound should not be resorted to generally, but that the chief method of examination should be by means of the finger. Still, if the sound is introduced into the bladder, and the finger into the rectum, the sound may be of great assistance in arriving at a decision whether the uterus is present or not in its proper position. In cases of inversion it simply gives us negative evidence.

The Business Committee read by title a paper entitled "A Plea for Old Physic," by Dr. Wm. B. Sprague, being his annual address as President of the Genesee County Medical Society.

Dr. QUACKENBUSH introduced Dr. E. B. Stevens, a delegate from the Ohio State Medical Society, to the President; also, Dr. Alfred Hosmer, delegate from the Massachusetts State Medical Society; also, Dr. R. M. Fowler, delegate from the Connecticut State Medical Society. All were presented to the Society, and severally responded to their introduction.

Dr. CHARLES A. ROBERTSON, of Albany, then read a paper upon "Diagnosis of Diseases of the Eye." The subject was considered under two heads, namely, diseases affecting the external portions of the eye and its appendages, and the diseases affecting the internal structures of the eye. A brief outline was given of the various forms of disease, their leading symptoms and peculiarities.

A paper upon the life and character of the late Alexander H. Stevens, by Dr. J. G. Adams, was presented and referred.

Digitized by Google

The President announced the following Nominating Committee:

First District.....	Dr. C. R. Agnew.
Second District.....	" Solomon Van Etten.
Third District.....	" G. H. Hubbard.
Fourth District.....	" Z. B. Bridges.
Fifth District.....	" Edwin Hutchinson.
Sixth District.....	" Wm. C. Wey.
Seventh District.....	" E. W. Bottum.
Eighth District.....	" H. W. Dean.

Dr. Frank S. Low moved that a committee of three be appointed to invite the Members of the Legislature, who are physicians, to meet with us and participate in our deliberations. Carried.

The Chairman of the Business Committee moved, that when the Society adjourns at the Evening Session, they adjourn to meet at 9.30 Wednesday morning, and that they now adjourn to meet this evening at 7.30, for Evening Session. Adopted.

Evening Session.

The Society came together at the appointed time, Dr. Burdick, Vice-President, in the chair.

Report from the Committee on Hygiene being the special order of business for the evening, Dr. A. N. Bell, Chairman of the Committee, reported progress as follows: Every County Medical Society in the State had been communicated with, and asked to send responses to the following questions:

To what extent are the diseases of your county due to insufficient drainage? How many acres of marsh lands have you in your county? Have you intermittent diseases attributable to soil saturation? Are there in your county cases of intermittent fever where surface drainage has been well regulated? What system of drainage is necessary to render your county free from malarial diseases?

The responses have been liberal, having been received from upwards of fourteen counties.

The reports from several towns were then read. Some of these reports were well digested, and all conveyed the common import that the value of surface drainage cannot be overestimated in preventing the development of malarial diseases.

The report from the New York County Medical Society was read by Dr. Moreau Morris.

His report was illustrated by maps showing where defective drainage was present in various parts of the city. In several places nat-

Digitized by Google

ural drainage-streams have been constantly obstructed in the construction of public works. Along these old water-courses malarial diseases have been developed, and are chiefly confined to these saturated sections. Drainage is the great prophylaxis for the prevention of malarial diseases. Proper drainage consists in the removal of all surface water which is not necessary to support vegetation.

Gen. VIELE, of New York, was then introduced to the Society, and made some remarks upon the subject of hygiene, but particularly as connected with the subject of drainage in Central Park, New York, and Prospect Park, Brooklyn. The remark was made that saturated soil is the source of more than one-half of the disease in the country. The passage of a law should be secured to compel people to feel that no one man shall flow land or do anything contrary to the interests of his neighbors in a hygienic point of view.

Report was also made from Oneida County by Dr. Samuel G. Wolcott.

Dr. GUERNSEY, of Dutchess County, remarked upon the propriety of securing some system of legislation to protect the people from the suffering which is now imposed upon them in many places, as the result of imperfect drainage, on account of the neglect of some individuals to give proper consideration to the subject.

Dr. C. R. AGNEW, of New York, remarked that an effort should be made to secure a sanitary map of the entire State, and that we should have enabling acts by which we can meet just such conditions as sanitary science may demand. One of the most conspicuous sources of evil throughout the rural districts is the improper location of wells. Many such evils may be remedied by proper measures, secured and introduced by medical men.

Dr. J. P. GRAY, of Utica, remarked that the city fathers and local authorities cannot be relied upon for any relief in the direction suggested by the subject of the evening. He regarded it as certain that relief could only come from some central power having at its head a permanent engineer, who shall have control of the entire matter. Assistants may then be located at different points throughout the State, for local authorities are generally entirely indifferent with regard to these matters. Several cases were referred to, illustrating the evil effects of improper drainage.

Dr. SNYDER, of Montgomery County, also mentioned several cases illustrating the evil effects produced by improper drainage in the development of fevers of various kinds; and if some relief could be obtained by law it would be very beneficial and desirable. He was

Digitized by Google

of the opinion that cheese factories are a very prolific source of typhoid poisoning, and cited several cases illustrative of his opinion upon this point. He related one case in which he believed that a family were poisoned on account of the cows drinking water from a pond which was impregnated with drainage from a cheese-house, pig-yard, and privy.

Dr. Wey moved a vote of thanks to Gen. Viele for his highly instructive remarks. Motion unanimously carried.

The President remarked that a committee should be appointed to take the entire subject into consideration, and that such committee should have plenary power of action. The Doctor then made quite extended remarks relative to the subject under consideration.

Dr. Sherman, of Ogdensburgh, remarked with regard to the location of privy vaults, and cited cases in illustration of the development of typhoid fever as the result of drinking water that had been contaminated by percolations from them.

Drs. Thomas Hun, J. P. Gray, and J. P. White were announced as a Committee upon the President's Address.

The Society then adjourned, to meet the next day at 9.30 A.M.

NOTE.—These reports and the full report of the Evening Session have been printed, and sent to every physician in the State, therefore omitted here.

SECOND DAY'S PROCEEDINGS.

Morning Session.

The Society was called to order at 9.30 A.M., by the President, Dr. Moore.

Prayer by Rev. Henry Darling, D.D.

Minutes read and approved.

The Chairman of the Business Committee presented a report of the Committee on Hygiene, of Richmond County. Referred to Committee on Hygiene.

Dr. H. Knapp, of New York, read a paper on "The Pathology of Tumors of the Eye-ball," with microscopic and macroscopic demonstrations.

The subject of the paper was illustrated by large mountings of tumors in glass cells, by diagrams upon the black-board, and by microscopical specimens, thereby giving both gross and minute appearances. The specimens embraced chondromata, sarcomata, gliomata, glio-sarcomata, melano-sarcomata, etc.

Pathological changes were briefly and concisely alluded to in con-

Digitized by Google

nection with salient points of clinical and operative importance. Some remarks were also made upon the question of diagnosis, to the effect that, in the earlier stages, intra-ocular tumors produce no irritation whatever. In arriving at a diagnosis, perforation of the coats of the eye and laceration of the retina are not only justifiable, but commendable. Attention was also called to diagnosis by means of the ophthalmoscope specially devised for the purpose.

The paper was discussed by Drs. Noyes, Graves, and Rider.

Dr. NOYES called attention to the fact, in matter of diagnosis, that certain appearances within the eye following cases of cerebro-spinal meningitis, closely assimilate the appearance of intra-ocular tumors. Early diagnosis and extirpation of intra-ocular tumors is the only safe method of treatment.

Dr. GRAVES regarded it as important that we should endeavor to get behind all external manifestations, and arrive at what the change consists in, which converts a normal cell into an abnormal cell; this would perhaps enable us to determine the distinction between benign and malignant forms of disease.

Dr. NOYES remarked that, practically speaking, intra-ocular tumors necessitated extirpation of the eye; so that, the fact of being malignant or non-malignant, practically, was not of such absolute importance.

Dr. KNAPP recalled a case in which operation had been performed upon an intra-ocular tumor successfully without extirpation of the eye.

Dr. RIDER also gave the history of a tumor of the iris which was operated upon, and the patient recovered with preservation of vision.

A paper upon "Hæmoptysis," by Dr. Leaming, of New York, was announced. Referred.

Report of Dr. Caro, as delegate to the Pennsylvania State Medical Society, was announced and referred. Biographical sketch of Dr. R. S. Allen, by T. B. Reynolds. Referred.

Dr. JOHN P. GRAY next read a paper upon the "Pathology of Insanity." His paper was illustrated by photo-micrographs, and embraced investigations upon fifty-two cases.

The Business Committee read by title the following paper: "A brief and partial resumé of the Medical Society of the State of New York," by Dr. D. P. Bissell, of Utica.

Dr. ROOSA read a paper upon "The Relation of Syphilis to Aural Disease."

Dr. SQUIBB read a paper on "Ergot and its Preparations," making the following remarks at the close: It has been recently observed

Digitized by Google

that oleic acid has peculiar properties by which it passes into the circulation much more rapidly than any other. I have had repeated evidences of this; applied to the skin it produces peculiar effects, opening the doors for the administration of other medicines. But whatever system of using it is the most successful, certain it is, that it is well worth our attention to consider the possibility of using oleic acid for the eradication of substances that have been absorbed into the circulation. Oleic acid is the acid of the more fluid parts of fats. If the skin is moistened with it until it is quite greasy, in a very short time it is all gone. Another fact is quite astonishing: a person's skin may be covered with the acid, and a piece of oiled silk laid over the parts, and in a very short time afterwards the skin is perfectly dry.

In the hypodermic use of ergot a great many abscesses have occurred from imperfectly cleansed syringes. I have known abscesses to occur in this way when the real substance was not necessarily irritant. Now the thing is to know how to cleanse a hypodermic syringe. The best way is to cleanse it by drawing it through the flame of a lamp or candle. You will cleanse it more effectually in this way, than in any other. It will not necessarily interfere with the temper of the syringe, and the instrument-makers say that it is not materially changed by the process. The tissues through which the instrument has to pass, are necessarily very soft, so that it is not necessary to have a very hard point. It is quite surprising to see how perfectly cleansed they will come out in this way.

Dr. J. P. White made some remarks regarding the supposed poisonous qualities of ergot, saying that he had never known it to have such an effect upon the system.

Dr. S. Caro spoke with satisfaction of his experience with ergot as a haemostatic, and also called attention to his observation that it caused a rapid filling of the bladder with urine.

The Secretary read the following communication:

Dr. John Swinburne requests the pleasure of the company of this Society, permanent and honorary members, delegates and invited guests, at an entertainment, at the Delavan House, this evening, immediately after the President's Address.

Dr. J. V. P. Quackenbush made the following report as chairman of the Publishing Committee:

The Committee on Publication would respectfully report, that for the first time in their memory, the Legislature has refused to make appropriation for the publication of our Transactions. This placed

Digitized by Google

the committee in a position in which it was delicate to act. And the question naturally presented itself, "Shall we initiate a new mode of publishing our Transactions, or shall we leave that to the action of the Society?" We concluded to be guided by the Society, and carry out their directions. We would state, further, that the New York County Medical Society, the Monroe County Medical Society, and some others, have lately offered to pay their proportion of the expense of publication.

J. V. P. QUACKENBUSH,
H. B. WHITON,
WM. H. BAILEY.

Dr. GEORGE M. BEARD then read a paper on "A New Method of treating Malignant Tumors by Electrolyzing the Base."

Dr. BEARD stated that for three years he had been treating malignant tumors by a method which he devised and first used in 1871. He called this method *electrolyzation of the base, or working up the base.*

In the ordinary method of electrolysis of tumors, the needles are plunged directly into the growth. In the method of working up the base, the needles are not inserted into the body of the tumor, but *into and around the base*, so as to act upon the surrounding healthy tissues.

The ordinary method of electrolysis is the proper method for nævi, benign cystitis, and aneurism, and it relieves and cures very many of these tumors, as Dr. Beard had confirmed by a variety of cases. The ordinary method is also of value in goitres and some fibrous growths; it makes such tumors smaller by a certain percentage, even when it does not cure them. Its use in such cases is now recognized.

But the ordinary method of electrolysis is not sufficient for *malignant* tumors; it but rarely cures them, even the softer forms, as epithelioma, and then must usually be several times repeated.

When the method of working up the base is used, the body of the tumor may be removed by the knife or the ligature. When the tumor is small and accessible, the negative needle is plunged directly beneath it, while the positive is applied also beneath the tumor, and very near the negative needle. With a strong current used in this way—either being of course employed—tumors of considerable size may be electrolyzed off, and at the same time the base thoroughly worked up.

Dr. Beard exhibited some long, spear-shaped needles that he had devised for the method of working up the base; also a harrow-electrode that he had devised for the same purpose.

In his experiments with this method during the past three years he

Digitized by Google

had had the coöperation of very many physicians and surgeons, and especially of Dr. A. Crosby, who had worked with him in a number of cases of malignant growths of the lips, face, breast, neck, vagina, and rectum.

The advantages that Dr. Beard claimed for this method over the ordinary methods by the knife and ligature, and caustics, were these:

1. The tumors do not so readily recur, at least so far as present experience can show, provided they are so accessible that the method can be thoroughly used. Tumors which, when operated on by the knife and ligature, had recurred at once, had now stayed away one, two, and three years.

2. There is probably less liability of pyæmia. Although he had operated many times in the rectum and vagina by this method, and on debilitated cases, no case of pyæmia had yet occurred.

3. There is less liability to shock than when the knife is used. Electricity is the best of all antidotes to shock.

The two disadvantages of the method are, that it is long and somewhat tedious, and is followed in some cases by irritative fever.

The effects of electricity when used for electrolysis is mainly of a *chemical* and *local* character; destruction of tissue and cauterization are simply incidental and accompanying results, and it is by its local and complex chemical effects on the tissues around the tumor that the cures are effected. He assumed that malignant tumors were originally local diseases, and did not claim any constitutional effects from his method.

Dr. Beard stated that longer time and larger induction were needed to permanently establish the advantages claimed for the method of working up the base, and that he was still investigating the subject with the coöperation of the best surgical skill; and would report the results of his investigations at the next meeting of the Society.

Dr. ROBERT NEWMAN, of New York, next presented the leading features of a paper which he had prepared upon "Electrolysis in Stricture of the Urethra." Having ascertained the number of strictures and their sensibility, and the susceptibility of the patient, the electrical apparatus is properly attached to bougies, the positive sponge is placed in the hand of the patient, the bougie is introduced to the stricture, and the battery opened gradually, using first a single cell of the battery, until slight burning sensation is produced, but not carried farther. This action produces galvano-electric decomposition and absorption. The current must be kept steady, and all shocks

Digitized by Google

avoided. The stricture can be felt to yield, and soon the bougie will pass through it. The operation should be repeated only as often as once in two or four weeks. Sitting at each time may be continued ten or fifteen minutes, according to the necessities of the case. He had succeeded in all cases during three years past which had been treated by this method. Drescher's battery was regarded as being the best.

The paper was discussed by Dr. BEARD, and this method of treatment was regarded as serviceable if properly and carefully applied. The kind of battery employed he did not regard as being important.

The last paper for the morning session was read by Dr. E. H. PARKER, of Poughkeepsie, upon "Sleeping Doctors." The paper was a *résumé* of the methods of operation by clairvoyants and spiritualists, and some reflections upon the same, relative to the effect one mind has upon another.

Adjourned to 3 P.M.

AFTERNOON SESSION.

The Society convened at 3 P.M., Dr. MOORE, President, in the chair.

Dr. A. JACOBI, of New York, read a paper on the subject of "Embryological Demonstrations."

Dr. J. MARION SIMS, of New York, read a paper on "Fibroid Tumors of the Uterus."

Dr. VANDERPOEL presented by title, a "Biographical Sketch of Dr. R. L. Allen, of Saratoga," by Dr. T. B. Reynolds.

Dr. E. KRACKOWIZER, of New York, read a paper on "Perineal Lithotripsy."

All were referred to the Committee on Publication.

The Committee upon Hygiene was then announced by the Chair, and consisted of Drs. A. N. Bell, S. O. Vanderpoel, H. D. Didama, H. W. Dean, Stephen Smith, C. R. Agnew, and W. C. Wey.

The President remarked that, in the appointment of this committee, he did not wish to be restrictive or personal, but designed it as a recognition of the good work which had been performed by the old committee, and had made but a single change, and that was at the solicitation of the member of the old committee who had been removed.

Dr. ELIOT made the motion that the committee, as now standing, be empowered to take such steps as, in their wisdom, they may deem

Digitized by Google

proper for the purpose of securing such legislation upon the subject as may be necessary. Adopted.

Dr. L. B. COTES then read a paper upon "Urethrocele." The paper consisted of a history of a severe case of this affection. There is now much improvement in the patient, subsequent to the operation. Reference was made to the Transactions of 1871–2 for a complete history of the disease, and the proper point for the operation of cystotomy.

The next paper was read by Dr. GEORGE T. STEVENS, on "The Relation between Cardiac Affections and Diseases of the Eye and Ear." Reference was made to Graves's disease, or exophthalmic goitre. This disease is known to be a nervous disease. We have reason to believe that a similar irritation of the cardiac plexus may be the cause of diseases of the ear as well as ophthalmic affections. Some cases of ear affection were referred to, in the belief that they were due to cardiac complications.

The rules were suspended, to allow Dr. KENDALL to call up from the table a resolution which was introduced last year, in regard to changing the method of appointing the Nominating Committee.

The resolution was as follows:

Resolved, That the by-laws of this Society be altered so that section 11 of paragraph 3 shall read as follows: At the annual meeting, at the close of the morning of the first day, the members of the Society shall be organized into eight committees, by Senatorial districts, as established by the law of 1836; the members present from each district constituting one committee, each of which shall elect one member; the members thus elected, with one appointed by the President as chairman, shall constitute the Committee on Nominations.

After a full discussion, on motion of Dr. HUTCHISON, of Brooklyn, the whole subject was indefinitely postponed.

On motion, the Society adjourned to meet in the Assembly Chamber at eight o'clock in the evening, to hear the President's Address.

EVENING SESSION.

The Society met in the Assembly Chamber at 8 P.M., and was called to order by the Vice-President, Dr. BURDICK, who announced the occasion of the meeting, and introduced the President, Dr. MOORE, who then delivered the Annual Address.

Dr. WM. C. WEY moved that the thanks of the Society be tendered Dr. Moore, for his valuable and thoughtful address. Unanimously carried.

Digitized by Google

The meeting then adjourned to the Delavan House, where the members of the Society, invited guests and others, were entertained by Dr. John Swinburne, of Albany.

THIRD DAY'S PROCEEDINGS.

MORNING SESSION.

The Society met at 9.30, and was called to order by the Vice-President, Dr. BURDICK.

Prayer was offered by Rev. Dr. MAGEE.

The minutes were read and approved.

Dr. GRAY, from the Committee on the President's Address, made the following report:

To the State Medical Society:

Your Committee on the President's Address would respectfully report:

That they have carefully read and considered the several matters treated of in the interesting address of the President.

FIRST—*As to Legislation.* The President has fully and clearly set forth the past history and present relations of the Society to the State, under successive legislative enactments, and shown that the subject is one of great importance to this Society and to the medical profession. His admirable and perspicuous *résumé* places the subject before the Society in a light demanding attention and action.

Your committee have also considered other papers on this topic, referred to them by the Society.

The matters involved are of such moment that they require more time and deliberation than can be comprised in a brief session of the Society. They would, therefore, recommend the appointment of a committee to examine the laws, and report to the next meeting of the Society what modifications, if any, are necessary, touching the incorporation and organization of the State Medical and County Societies, and all other matters of legislation pertaining thereto.

SECOND—*As to Publication of Transactions.* Your committee have considered the matter of publication of the Transactions of the Society, discussed in the President's address, taking into consideration also the several communications of county societies and individual members addressed to the President and Secretary, and placed in the hands of your committee. They would recommend, therefore,

Digitized by Google

that State aid be not further invoked for the publication of the Transactions of this Society, but that the Society publish its own Transactions, and that the expense of the same be met by a system of assessments on permanent members and county societies; that all existing permanent members be requested to pay annually to the Treasurer of the State Society the sum of three dollars, and that all permanent members, hereafter elected, be required to pay yearly the same amount, which payment shall entitle them to a copy of the Transactions. That each County Society, at the meeting before the annual meeting of the State Society, shall assess the members in a sum not less than one dollar and fifty cents, which amount the treasurer of each County Society shall remit to the Treasurer of the State Society, on or before the 1st day of February, which shall entitle the several County Societies to one copy of the Transactions for each one dollar and fifty cents remitted.

Further, that all the funds thus received by the State Society shall be appropriated to the publication of the Transactions, and other necessary expenses of the Society.

Further, that the Committee on Publication shall publish so many, and not less than twelve hundred, copies of the Transactions as may be necessary, and in such manner as may be deemed most advantageous to the interests of the Society.

All of which is respectfully submitted.

Thomas Hun,
John P. Gray,
James P. White.

The report of the committee was discussed by Drs. Bell, Quackenbush, Gray, Sherman, Bates, Low and Squibb, after which it was adopted.

Dr. Gray introduced the following resolutions:

Resolved, That the Secretary be instructed to have the report of the Committee upon Hygiene and the discussion thereon printed as soon as practicable, and sent to every County Medical Society in the State as a communication from this Society.

Resolved, That the Secretary be instructed to urge upon the County Societies the importance of having Committees on Hygiene incorporated with the standing Committee on Hygiene of the State Society, and that the investigations of the county committees in this regard, on the approval of the respective county societies having such committees, be forwarded to the Committee on

Digitized by Google

Hygiene of the State Society, in order to be summarized by that committee in their annual report. Adopted.

Dr. E. R. SQUIBB offered the following preamble and resolutions:

In a review of the proceedings of the American Medical Association, and from facts easily accessible to all, it is seen that recent legislation by Congress in regard to the medical departments of the Army and Navy, while aiming to recognize the services of the officers constituting these corps, has done injustice to the Army Medical Corps by leaving them inferior to the corresponding corps of the navy, and below their true merit and standing in regard to rank and pay.

It is also seen that the recruiting and promotion in the medical corps of the army, which were suspended after the war, are still stopped by law, against the repeated recommendations of the War Department, and to the serious embarrassment of the Surgeon General's office, without any real economy, since the duties cannot be remitted, and the vacancies are therefore supplied by numerous expensive contract surgeons, not trained to the discipline and work required.

It is also seen with much regret, that these influences tend to discourage and dishearten the army medical corps, so that valuable officers frequently resign their commissions, to take the more favorable chances of service in civil life. Under such circumstances the government not only loses some of its best officers, but the recruiting of the corps upon its present high standard of competitive merit is rendered more and more difficult, and may soon become impossible. The Medical Departments of the army and navy have long been successfully supplied with officers by a well-administered system of competitive examination, the great advantages of which have of late years been sought for other branches of the government, in what is now popularly known as civil service reform. But if Congress insists on retiring officers upon inadequate pay at so early and so active an age, and upon low rank, small pay and slow and limited promotion, even this admirable plan must fail for want of ability in those who present themselves for these competitive examinations. Be it, therefore,

Resolved, By the Medical Society of the State of New York, that it heartily supports the memorial of the American Medical Association to Congress, in regard to the rank, pay and promotion of the Medical Corps of the United States Army, and respectfully but strongly urges the senators and representatives of this State in

Digitized by Google

Congress to favor, and if possible to secure the objects of this memorial.

Resolved, That the County Medical Societies represented in this State Society be urged to exert their influence with members of Congress to a consideration of this important subject, before it be too late to correct the evils rapidly accruing upon the present course of legislation in medical and sanitary affairs.

Resolved, That this preamble and these resolutions, properly authenticated by the President and Secretary of the Society, be printed, and that copies be sent to each Senator and Representative of this State in Congress, to the Surgeon General of the Army, to the Surgeon General of the Navy, to the Presidents of the several County Medical Societies, and for general distribution wherever they may be useful in promoting the objects in view.

The resolutions were adopted.

Dr. Vanderpoel read by title the following: "A case of tetanus after miscarriage, successfully treated by chloral hydrate," by Dr. J. V. Kendall, of Baldwinsville; also, "A case of true bony anchylosis of the left side of the lower jaw, successfully treated by surgical operation," by Dr. James L. Little, of New York.

Dr. A. Van Derveer, of Albany, read a paper on "Penetrating gun-shot wounds of the cranium," exhibiting a case.

Dr. Moreau Morris narrated a case which fell under his observation this morning at the hotel while at breakfast, as a practical exemplification of the statements made by the President in his address last evening concerning dyspepsia as one of the evidences of barbarism, and the average duration of the "American meal."

Dr. McFarland read a paper on "Adjustable dressing for fractures."

Dr. H. W. Dean, chairman of the Committee on Prize Essays, reported in favor of awarding the Merrit H. Cash prize for 1874, to Thomas K. Cruse, M.D., of Tarrytown, for an essay on "Colles' Fracture." The committee proposed as a subject for the next M. H. Cash prize, the subject of "School hygiene in reference to the physiological relations of age and sex to mental and physical education." The committee also solicit essays for the Brinsmade prize upon any physiological, therapeutic, or pathological subject, at the election of the competitor.

The report was adopted.

Dr. C. H. Porter made the following report as Treasurer:

Digitized by Google

The Medical Society of the State of New York in account with the Treasurer.

1873.

To balance on hand, as shown by Treasurer's report for 1873	$672	43
Received from societies, institutions, and indivduals as follows:		
Albany County Medical Society, 1873	20	00
Allegany County Medical Society, 1873	5	00
Broome County Medical Society, 1873	5	00
Cattaraugus County Medical Society, 1873	10	00
Cayuga County Medical Society, 1873	10	00
Chautauqua County Medical Society, 1873	20	00
Chemung County Medical Society, 1873	5	00
Chenango County Medical Society, 1873	5	00
Clinton County Medical Society, 1873	5	00
Columbia County Medical Society, 1873	10	00
Cortland County Medical Society, 1873	5	00
Dutchess County Medical Society, 1873	10	00
Erie County Medical Society, 1873	25	00
Franklin County Medical Society, 1873	5	00
Fulton County Medical Society, 1873	5	00
Genesee County Medical Society, 1873	5	00
Greene County Medical Society, 1873	5	00
Herkimer County Medical Society, 1873	5	00
Jefferson County Medical Society, 1873	10	00
Kings County Medical Society, 1873	45	00
Lewis County Medical Society, 1873	5	00
Livingston County, Medical Society, 1873	5	00
Madison County Medical Society, 1873	10	00
Monroe County Medical Society, 1873	15	00
Montgomery County Medical Society, 1873	5	00
New York County Medical Society, 1873	105	00
Niagara County Medical Society, 1873	10	00
Oneida County Medical Society, 1871, 1872	30	00
Onondaga County Medical Society, 1873	15	00
Ontario County Medical Society, 1873	10	00
Oswego County Medical Society, 1873	15	00
Otsego County Medical Society, 1873	10	00
Queens County Medical Society, 1873	10	00
Rensselaer County Medical Society, 1873	15	00
Rockland County Medical Society, 1873	5	00

Digitized by Google

St. Lawrence County Medical Society, 1873	$15 00
Saratoga County Medical Society, 1871, 1872	20 00
Schenectady County Medical Society, 1873	5 00
Schoharie County Medical Society, 1873	5 00
Schuyler County Medical Society, 1873	5 00
Seneca County Medical Society, 1873	5 00
Steuben County Medical Society, 1873	10 00
Sullivan County Medical Society, 1873	5 00
Tioga County Medical Society, 1872, 1873	10 00
Tompkins County Medical Society, 1873	5 00
Washington County Medical Society, 1873	5 00
Westchester County Medical Society, 1873	15 00
Yates County Medical Society, 1873	5 00
College of Physicians and Surgeons, New York, 1873	5 00
Medical Department University of Buffalo, 1873	5 00
Initiation fees as permanent members from P. V. S. Pruyn, C. C. Murphy, H. H. Greene, R. H. Ward, W. H. Helme, T. Blanch. Smith, W. L. Baldwin, John R. Cotes, J. S. Dolson, Chas. N. Palmer, J. Marion Sims, Geo. W. Earll, G. W. Dodge, Robert Newman, Wm. Fitch, John Parr, H. G. P. Spencer, E. R. Hun, five dollars each	90 00
	$1,362 43

The expenditures for and on account of the Society from February 6, 1873 to February 3, 1874, were as follows:

A. G. Graves & Son, rent of Perry Hall		$60 00
Albany Publishing Company		1 00
Dr. W. H. Bailey,		
For services as Secretary	$250 00	
Postage	71 00	
Services of page	5 00	
Services of porter	10 00	
Expressage on Transactions returned	5 87	
		341 87
Jacob H. Waggoner (carpentering, &c.)		7 20
Morning Express, advertising		2 00
J. C. Butler, use of chairs and tables		16 00
Weed, Parsons & Co., printing		67 50

Digitized by Google

P. Deming, reporting, etc.	$178 43
Treasurer, postage	2 40
Total expenditures	$676 40
Total receipts	$1,362 43
Total expenditures	676 40
Balance in treasury February 2, 1874	$686 03

of which balance in treasury there is belonging to Merritt H. Cash Fund, $115.00.

Societies and Institutions in Arrears with the Medical Society of the State of New York for Annual Dues, February 3, 1874.

2	Cayuga County Medical Society, 1871, 1872	$20 00
2	Delaware County Medical Society, 1873	10 00
1	Essex County Medical Society, 1873	5 00
4	Oneida County Medical Society, 1873	20 00
2	Orange County Medical Society, 1873	10 00
1	Putnam County Medical Society, 1873	5 00
1	Richmond County Medical Society, 1873	5 00
2	Saratoga County Medical Society, 1873	10 00
1	Suffolk County Medical Society, 1872, 1873	10 00
3	Ulster County Medical Society, 1873	15 00
1	Warren County Medical Society, 1873	5 00
2	Wayne County Medical Society, 1873	10 00
1	Wyoming County Medical Society, 1873	5 00
	Albany Medical College, 1872, 1873	10 00
	Bellevue Medical College, 1873	5 00
	Long Island College Hospital, 1873	5 00
	New York Academy of Medicine, 1873	25 00
	College of Physicians and Surgeons, Syracuse, 1873	5 00
	Medical Department University, New York, 1870–71–72–73	20 00

The following gentlemen, elected permanent members, have not paid the initiation fee:

William Van Pelt, elected 1871; E. W. Simmons, elected 1873.

Dr. QUACKENBUSH moved that a committee of three be appointed to audit the Treasurer's report. Adopted.

The PRESIDENT named Drs. Quackenbush, James S. Bailey and J. Foster Jenkins such committee.

They afterwards made the following report, which was adopted:

The Committee appointed to examine the accounts of the Treasurer

Digitized by Google

of the Society respectfully report they have performed the duties assigned them, and find the report correct.

The report of the committee was accepted, and also the report of the Treasurer.

Dr. Wm. C. Wey, on the part of the committee, consisting of Drs. E. M. Moore, Thomas Hun and W. C. Wey, to whom was referred the duty of recommending to the Regents of the University of the State of New York a list of examiners in medicine, in accordance with the laws of 1872, presented the following names:

Drs. E. M. Moore, Alonzo Clark, E. Krackowizer, John P. Gray, S. O. Vanderpoel, E. R. Squibb, John Ordronaux, A. Jacobi, and Thomas Hun.

The committee thus named were empowered to fill any vacancies which may occur.

The report was adopted.

Dr. Wm. C. Wey read the report of the Committee on Nominations as follows:

President—Dr. Geo. J. Fisher, Sing Sing.

Vice-President—Dr. Harvey Jewett, Canandaigua.

Secretary—Dr. Wm. H. Bailey, Albany.

Treasurer—Dr. Charles H. Porter, Albany.

Censors.

Southern District...	E. R. Squibb, M.D., Brooklyn.
	E. H. Parker, M.D., Poughkeepsie.
	Ellsworth Eliot, M.D., New York.
Eastern District....	Henry B. Whiton, M.D., Troy.
	James L. Babcock, M.D., Albany.
	John P. Sharer, M.D., Little Falls.
Middle District....	M. M. Bagg, M.D., Utica.
	W. T. Bassett, M.D., Cooperstown.
	C. G. Bacon, M.D., Fulton.
Western District....	L. B. Cotes, M.D., Batavia.
	Harvey Jewett, M.D., Canandaigua.
	Caleb Green, M.D., Homer.

Committee on Correspondence.

First District.....	Thomas Addis Emmet, M.D., New York.
Second District....	William P. Townsend, M.D., Goshen.
Third District.....	Henry B. Whiton, M.D., Troy.
Fourth District.....	Taber B. Reynolds, M.D., Saratoga.
Fifth District.....	Samuel G. Wolcott, M.D., Utica.

Digitized by Google

Sixth District..... John G. Orton, M.D., Binghamton.
Seventh District.... Hervy B. Wilbur, M.D., Syracuse.
Eighth District.... Charles E. Rider, M.D., Rochester.

PERMANENT MEMBERS.

First District ..... Gurdon Buck, M.D., New York.
Alexander Hutchins, M.D., Brooklyn.
Second District..... A. T. Douglas, M.D., Rondout.
Bradley G. McCabe, M.D., Monticello.
Third District ..... Alexander M. Vedder, M.D., Schenectady.
James S. Bailey, M.D., Albany.
Fourth District..... Elisha H. Bridges, M.D., Ogdensburgh.
Edward S. Walker, M.D., Ilion.
Fifth District..... Judson B. Andrews, M.D., Utica.
William H. Rice, M.D., Phœnix.
Sixth District..... William H. Beardsley, M.D., Coventry.
E. C. Moe, M.D., Groton.
Seventh District.... James D. Button, M.D., Auburn.
R. W. Pease, M.D., Syracuse.
Eighth District..... William B. Sprague, M.D., Pavilion.
B. L. Hovey, M.D., Rochester.

ELIGIBLE FOR PERMANENT MEMBERS.

Third District ..... Lemuel Cross, M.D., Cobleskill, Schoharie Co.
Israel C. Bourne, M.D., Masonville, Del. Co.
Geo. P. Salmon, M.D., Hudson, Columbia Co.
Fourth District..... Asa W. Tupper, M.D., N. Granville, Wash. Co.
Henry Gray, M.D., Greenwich, Wash. Co.
Fifth District..... Joseph Gardiner, M.D., Williamstown, Osw. Co.
Hiram G. Dubois, M.D., Camden, Oneida Co.
F. W. Root, M.D., E. Hamilton, Madison Co.
Sixth District..... C. B. Richards, M.D., Binghamton, Broome Co.
Seventh District.... Judson C. Nelson, M.D., Truxton, Cortland Co.
Wm. Oliver, M.D., Penn Yan, Yates Co.
J. W. Palmer, M.D., Victor, Ontario Co.
Eighth District..... Thos. D. Strong, M.D., Westfield, Chaut. Co.

HONORARY MEMBERS.

Drs. J. Matthews Duncan, Edinburgh, Scotland; Washington L. Atlee, Philadelphia, Pa.; William Boeck, Christiana, Norway; Benjamin W. Richardson, London, England; Joseph W. Brown, U. S. Army; Mr. T. Spencer Wells, London, England.

Digitized by Google

ELIGIBLE FOR ELECTION TO HONORARY MEMBERSHIP.

Drs. Francisco Dichira, Palermo, Italy; Louis Vecker, Paris, France; J. M. DaCosta, Philadelpdia, Pa.

FOR HONORARY DEGREE OF DOCTOR OF MEDICINE.

Drs. Peter Denny, Dutchess Co.; Wm. Newman, New York.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

Drs. E. M. Moore, Rochester; William Govan, Stony Point; N. C. Husted, New York; E. W. Bottum, Lyons; C. R. Agnew, New York; H. B. Whiton. Troy; A. N. Bell, Brooklyn; William C. Wey, Elmira; John G. Orton, Binghamton; Henry W. Dean, Rochester, William S. Ely, Rochester; George H. Hubbard, Lansingburgh; Joseph E. West, Utica; S. O. Vanderpoel, Quarantine; H. D. Didama, Syracuse; Frederick Hyde, Cortland Village; J. S. Prout, Brooklyn; M. H. Burton, Troy; James L. Little, New York; John G. Adams, New York; Ellsworth Eliot, New York; J. C. Hutchison, Brooklyn; James P. White, Buffalo; H. L. Chubbuck, Elmira; Levi Moore, Albany; B. F. Sherman, Ogdensburgh; J. Foster Jenkins, Yonkers; Francis Burdick, Johnstown; R. V. K. Montfort, Newburgh; E. Krackowizer, New York; E. R. Squibb, Brooklyn; George F. Shrady, New York; Thomas M. Flandreau, Rome; Israel Parsons, Marcellus.

DELEGATES TO THE PENNSYLVANIA STATE MEDICAL SOCIETY.

Drs. Salvatore Caro, New York; Levi Moore, Albany; Solomon Van Etten, Port Jervis.

DELEGATES TO THE OHIO STATE MEDICAL SOCIETY.

Drs. Thomas D. Strong, Westfield; William B. Sprague, Pavilion; Morgan Snyder, Fort Plain.

DELEGATES TO THE RHODE ISLAND STATE MEDICAL SOCIETY.

Drs. J. Marion Sims, New York; Thomas Addis Emmet, New York; D. P. Bissell, Utica.

DELEGATES TO THE MAINE STATE MEDICAL SOCIETY.

Drs. Hiram Corliss, Greenwich; Luther Guiteau, Trenton.

DELEGATES TO THE MASSACHUSETTS STATE MEDICAL SOCIETY.

Drs. John G. Adams, New York; George H. Hubbard, Lansingburgh; William H. Thayer, Brooklyn; E. H. Parker, Poughkeepsie; H. K. Bellows, Norwich; John P. Gray, Utica.

Digitized by Google

DELEGATES TO THE CONNECTICUT STATE MEDICAL SOCIETY.

Drs. Gurdon Buck, New York; Seth Shove, Katonah; A. T. Douglas, Rondout; James M. Minor, Brooklyn; Eugene Beach, Gloversville; Jared Linsley, New York; Bradford S. Thompson, Salisbury, Conn.

DELEGATES TO THE NEW JERSEY STATE MEDICAL SOCIETY.

Drs. Robert Newman, New York; Solomon Van Etten, Port Jervis; J. G. Orton, Binghamton; J. V. Kendall, Baldwinsville.

DELEGATES TO THE NEW HAMPSHIRE STATE MEDICAL SOCIETY.

Drs. J. H. Pooley, Yonkers; M. R. Holbrook, Poughkeepsie; Wm. M. Chamberlain, New York.

DELEGATES TO THE VERMONT STATE MEDICAL SOCIETY.

Drs. Geo. H. Hubbard, Lansingburgh; N. H. Ballou, Mechanicville; J. H. Wheeler, Athens.

DELEGATE TO THE CANADIAN MEDICAL ASSOCIATION.

Dr. Arthur S. Wolff, Plattsburgh.

DELEGATE TO THE MICHIGAN STATE MEDICAL SOCIETY.

Dr. Chas. G. Bacon, Fulton.

COMMITTEE UPON STATISTICS.

First District..... Dr. Ellsworth Eliot, New York.
Second District ..... Dr. John Ordronaux, Roslyn.
Third District ..... Dr. Jos. Lewi, Albany.
Fourth District ..... Dr. B. F. Sherman, Ogdensburgh.
Fifth District..... Dr. Henry N. Porter, New York Mills.
Sixth District..... Dr. John G. Orton, Binghamton.
Seventh District..... Dr. H. D. Didama, Syracuse.
Eighth District ..... Dr. Julius F. Miner, Buffalo.

COMMITTEE UPON PRIZE ESSAYS.

Drs. Thomas F. Rochester, Buffalo; Henry W. Dean, Rochester; Julius F. Miner, Buffalo.

COMMITTEE UPON PUBLICATION.

Drs. John P. Quackenbush, Albany; Thos. Hun, Albany; Wm. H. Bailey, Albany.

COMMITTEE UPON BY-LAWS.

Drs. Oliver White, New York; Thos. Hun, Albany; Wm. H. Bailey, Albany.

Digitized by Google

CENSOR OF SYRACUSE UNIVERSITY, MEDICAL DEPARTMENT.

Dr. Samuel G. Wolcott, Utica.

The following resolution is recommended for adoption:

Resolved, As the sense of the Nominating Committee, that the President of the Society be requested to urge faithfulness on the part of the Committee on Correspondence and Statistics, for the purpose of eliciting the information contemplated in the constitution of said committee.

All of which is respectfully submitted.

C. R. AGNEW, *Chairman.*

WM. C. WEY, *Secretary.*

The report of the committee was accepted.

Upon motion, Dr. QUACKENBUSH was directed to deposit an affirmative vote for President.

Upon motion, the by-law requiring a separate vote for each of the principal officers was suspended, and Dr. Quackenbush was requested to cast an affirmative ballot for the balance of the gentlemen put in nomination. The whole ticket was then declared elected.

Dr. WM. GOVAN offered the following resolution, which was unanimously adopted:

Resolved, That the thanks of this Society be tendered to Dr. John Swinburne for his generous hospitality, extended to them at the banquet given by him at the Delavan House last evening.

Dr. QUACKENBUSH offered the following:

Resolved, That the thanks of this Society be presented to President Moore for the impartial, prompt and business-like manner in which he has performed the duties of presiding officer during this meeting. Adopted.

The PRESIDENT—In reference to that resolution, gentlemen, allow me to say that this matter is entirely reciprocal. My relations with this body, I can assure you, have only been of the most pleasant nature; and it was only in view of the kind forbearance which I felt sure you would extend to me, that I felt equal to the undertaking. It was most pleasing to me to perceive the facility and readiness with which you received any suggestions that occurred to me in my rulings. Such bodies as these, as you are doubtless well aware, are ruled entirely by principles of honor. That power that rules legislative bodies, where the sergeant-at-arms stands ready, was not even necessary with us. We have

Digitized by Google

here a power still more potent and effective, which is the principle of honor which exists in every true gentleman.

On motion of Dr. QUACKENBUSH, the Society adjourned to the first Tuesday in February, 1875.

WM. H. BAILEY,
Secretary.

Digitized by Google

ARTICLE II.

Anniversary Address, delivered before the Medical Society of the State of New York, at its Sixty-eighth Annual Meeting, by E. M. Moore, M. D., President of the Society.

Our annual reunion has occurred, and is about to culminate. According to usage, your presiding officer is expected to bring to your notice statements of the situation. I find the outlook cheering. Indulging in no optimist views, one cannot survey the field without recognizing the rapid strides of civilization, and in none more marked than in the progress of natural science. The position of medicine is that of the central figure in this grand movement.

It has always kept alive the sacred fire, and been the inquirer into the most abstruse and difficult of all the topics of scientific investigation. The demands of mankind sustain the search for law in a blind way. But unfortunately it was commenced at the extremest point of difficult attainment, for no exhibition of vital or chemical force is more subtle and complex than in its relation to the human organization.

While the great conversationalist could pithily describe the practitioner of medicine as "an attendant on misery at the demands of peevishness," a wit could see him in his scientific character as "an unfortunate man ever groping for a law which he never finds." But the movement of science is so grand and overwhelming at the present moment, that no force seems competent to withstand it. The recruits to almost every branch of scientific inquiry are drawn from our ranks—usually enlisted young, it may be, but nevertheless joined by a community of method—a method which ever looks to law as its ultimate point of reach, which is only satisfied with absolute relations of facts. When these relations are established, when the sequences are absolute, then has man seen his God; then he thinks the great God—thoughts which fill him with awe and ecstasy; then he mounts the scientific tripod. It is the lot of but few to raise the veil from the inmost recesses of the temple; but when raised, mankind are invited to the communion. Then may man see the burning bush and hear the voice of God, and always uttering one grand command, "I will have obedience and not sacrifice." This was the happiness of Newton when announcing the law of gravitation, whose unwavering force we must obey, and which we cannot avert. This was also the joy of

Digitized by Google

Dalton and Gay Lussac, when the laws of definite proportion dawned upon them. The constitution of all things was then unveiled, really or potentially. In chemistry, the worker for specific facts corrects the error of his processes when the approximation is near, by the certainty of law. The study of science is the study of the cosmos, but the endless play of forces gives endless topics for search, and the inquiry into the unknown is naturally undertaken at a variety of points, such as fancy or accident may determine. The accumulation of isolated facts must take place long before exact relations can be shown; but glimmerings of these relations will surely shine upon the mind. Approximations grow more and more close—at last the law appears. A true science can hardly be said to *be* until at least *one* law can be shown to regulate its facts; then it is born, and grows on.

Chemistry was not a science because Priestly had discovered oxygen, fundamental as this was, but the laws of definite proportion at once placed it in this attitude forever. To the complexity of its conditions must be referred the admitted fact that therapeutics still remains an art; and physiology and pathology have only incipient claims to a scientific position. Diagnosis, rarely able to reach this great altitude of law, still approximates closer and closer. The statistical table substitutes and foreshadows the law. The attempt to anticipate it by some fine-spun theory which colored the facts to meet its own exigencies, has ever been our bane. The generation has only just passed away that was swayed by Broussais with an amount of authority that equalled any since the revival of learning. On what slender statements of fact could a sort of universal pathology be made to rest. A spread of vessels through the coats of the stomach was constantly found—ergo, inflammation. Disease having its origin in the gastro-enteric membrane, by the wonderful force of an unknown chemistry, varied its manifestations, through a species of differentiation, into all the fevers and phlegmasiæ.

I well remember the statements of two friends, my seniors, soon after my entrance into the profession, describing a post-mortem scene over which Broussais presided. These men were then students in Paris, and deriving their instruction from Louis, who was the risen star, one that will never set. Occupying the outer part of a small circle (for the crowds of former times had melted away), they were amazed to see an abdominal incision, the only one made, and the stomach the only organ removed. This being opened, and the inner surface brought to light, was held up in a glow of

Digitized by Google

scientific triumph, the net-work of large vessels being exhibited as the evidence of gastritis. No further view was attempted. The fact that a pneumonia or tuberculosis might be present was disregarded; for they, being only secondary, were not thought worth much time in the search. Of course, it is not asserted that this mode was the only method resorted to, and that bodies were not more thoroughly examined by this great theorist, but this is the description of one circumstance in the experience of two men now passed away, who distinguished themselves as teachers and authors. However, they had already learned the value of the statistical table, and resolved to really know the one fact of inflammation in this particular case. Therefore, waiting quietly until the crowd had passed away, they placed the stomach under a hydrant, and removing the mucus carefully, made parallel incisions in the membrane according to the custom of the pathologist. Raising the strip they found the membrane absolutely entire and free from disease. How rapidly does error rear its head, and how perfectly it disappears! I have just asseverated that the star of Louis will never set. The facts that he has brought forward may be so amplified as to be almost lost in the accumulations of minuter shades and closer approximations, but the prominence he gave the statistical table must ever stand—at no point will it pass away until it is superseded by law. Therefore, I repeat, the statistical table substitutes and foreshadows the law. The prevalence of law is now recognized in ways and in places that seemed a short time since to be impossible. As the Elizabethan age was the golden one of literature, although not so prolific by a hundredth part as the present, so this century, even if dwarfed by the mighty achievements of the future, must ever be the golden age of science. What an array! Chemistry, geology, mineralogy, crystallography, and on through a long list, all reaching back beyond it in their infantile gropings, but during this century acquiring the glow and vigor of early manhood. And now, we have even the science of language, and for the first time method and organization out of Babel's confusion. Now, we go forward and backward, following the speech of men which passes from nation to nation by certain phonetic laws. These have taken shape, and are becoming more and more sure in their application. The physiologist will, I think, yet show why the phonetic relations exist in the flow of vowels, in lingual, buccal, and laryngeal transitions of movement, either from some special nerve-distribution or muscular tie. Meanwhile, observation leads the way, as in astronomy

Digitized by Google

eclipses were foretold by approximation long before the *mécanicque céleste* gave the scientific solution, and brought prophecy to the accuracy of a second. Last, but not least, religions are now the subject of scientific scrutiny. Their mode of growth depending so largely on the emotions, would seem to be too irregular and incomprehensible to follow any fixed law—the facts are as those of meteorology in their vast variety—but the law of storms becomes the practical man's daily reliance. The growth and development of religions, studied by the light of history, begin to show certain features in common, which cannot fail to demonstrate great truths from which the race has much to hope. The scientific method has at last seized the problem apparently most intractable, and now challenges the cosmos. It cannot go backward. I again claim all this for the large and commanding position occupied by the medical profession in all such studies. That we have it of right I adduce the proof from early reliable history. I compare two men, the most noted of their time in their separate spheres. One who has long occupied the highest place in the pantheon of humanity. The other, who should be there, but has not had the wide appreciation necessary to his elevation. Tried by our standard to-day, which should occupy the loftier niche, the first, Socrates, earned his hemlock by the bold enunciation of unpalatable truths thrust without fear into the minds of Athenian youth. But how obscure was his sight! What a blind groping was scientific study at this epoch, even in brilliant Athens, though it began to foreshadow the century we have the fortune to live in. The second, Hippocrates, together with Socrates, laid himself open to the charge of impiety by the asseveration that the phenomena of nature were amenable to law and scientifically determinable. But while Hippocrates saw the truth with precision, the reach of Socrates was puerile. I quote from Grote:

"Socrates," said he, "distributed phenomena into two classes: one, wherein the antecedent and consequent was invariable and ascertainable by human study, and therefore future results were accessible to a well instructed foresight; the other, and those too, the most comprehensive and important, which the gods had reserved for themselves and their own unconditional agency, wherein there was no invariable or ascertainable sequence, and where the results could only be foreknown by some omen, prophecy or other specially inspired communication from themselves." Each of these classes was essentially distinct, and required to be looked at and

Digitized by Google

dealt with in a manner radically incompatible with the other. Socrates held it wrong to apply the scientific interpretation to the latter, or the theological interpretation to the former; physics and astronomy, in his opinion, belonged to the divine class of phenomena, in which human research was insane, fruitless and impious. On the other hand, Hippocrates merged into one, those two classes of phenomena, the divine and scientifically determinable, which Socrates had put asunder. Hippocrates treated all phenomena as at once both divine and scientifically determinable. In discussing certain peculiar bodily disorders found among the Scythians, he observes "the Scythians themselves ascribe the cause of this to God, and reverence and bow down to such sufferers—each man fearing that he may suffer the like: and I, myself, think too, that these affections, as well as all others, are divine; no one among them is either more divine or human than another—but all are on the same footing, and *all divine*—nevertheless, each of them has its own physical conditions, and not one occurs without such physical conditions." May we not feel proud of our Father, who thus finished the statement of scientific possibilities.

High in the temple is the statue of John Hunter; but he belongs to us. Hunter, met in the street by a medical acquaintance, was laughed at by him for carrying home, for some physiological studies, what he sneeringly called pig's pettitoes. This fellow represented his compeers and will live because of Hunter. But these remarks only point to the fact that the pure worker, the man who expects no reward, has at the present time an audience. He is sneered at only by the pure ignoramus—too often, also, the newly rich. His pig's pettitoes are his title to respect. It is sufficient that the study of nature is honestly undertaken, and the cry of "What use is it?" is no longer a scoff, but a *theme* for scoffing. When the telegraph was an experiment, Professor Morse was an applicant for Congressional assistance, and a successful one. Ever since the enormous extension of the telegraph, the nation has congratulated itself upon the expenditure which opened up such magnificent results. But had it been my fortune at the time to occupy a seat in Congress, my vote would have steadily been cast against him. The project was one to make money, and became a successful one. It had no claims over a thousand other inventions, which, if perfected, would spread wealth over the nation. Such projects are continually afloat, and the story of the inventor who sees clearly

Digitized by Google

and is not appreciated; who wastes his life in the vain attempt at finding some one to assist him in the development of his plans; who clings to the hope of fortune, and sinks before the goal is attained; who, like Fitch, dies dreaming of the steamboat that is to be, is one of the saddest of humanity. It is truly its tragic side; but this is the necessary condition of life. The venture is taken and fails, instead of the venture that wins. A few years and Morse would have had aid, as indeed he found. This vote would have been no spasm of economy, but the outgrowth of a principle. There is, however, a man who is in need of our support; and when we can find him, we should do ourselves the honor to give it. It is the prophet of science raising the veil from the face of nature, revealing to a worshiping world the ultimate law. It is not Morse who needs our help, but Galvani.

The frog's legs are as noble exponents of divine force as is the track of a comet. Galvani should have been sustained in every way consistent with his work. So far-reaching is a truth running across all knowledge in such mysterious ways, that we can never half comprehend its importance. Could Galvani have seen, even in his dreams, the immense expansion of his discovery? I think not.

The priest at the altar must be sustained; he is doing holy work. I have no difficulty in establishing the proper relation of the various men concerned in the development of great and useful enterprises like the magnetic telegraph. At the foot stands Rothschild, above him Morse, and at the head Galvani. But the world has nearly always stoned its prophets and slain those who have been sent unto it. It may be said that if the aid proposed were freely offered, we should too often find the recipient not a prophet but a lazy priest. Perhaps; but if we should have one prophet by supporting many drones, the result would be superb. In this country the experiment has had small trial. What has been done must be claimed as a success. The Anglo-Saxon has one test, excellent in almost all directions—will it pay? Perfect, in its largest sense; but in its direct and ordinary application too limited for our purpose. Even Sir Isaac Newton, one of the finest specimens of his class, received but partial support in the fellowship he filled, for it was burdened with duties foreign to his studies. His compeers performed these duties gratuitously, thus leaving him free to develop his great results. The government, anxious to recognize his achievements, could only make him master of the mint.

Our neighbor, Massachusetts, has done herself vast credit in the

Digitized by Google

relation she assumed with reference to Agassiz. The intense worker was grandly seconded in his undertakings. "I have no time to make money," he said, and proved his assertion by dying with debt on his roof-tree. I know of but two instances of the appropriation of money to uses strictly scientific, in which the profession in this country may be said to be interested, and both happen to have taken a similar direction. One is the development in the army museum, at Washington, of the purely scientific study of microphotography. This, as I believe, is only known to Government as the accident of the necessities of the museum in other directions, and not the direct and frank indorsement of Dr. J. J. Woodward in his investigations, which, in their influence on humanity, will be more than regiments of men. We look with pride to these labors reaching out into a new field, and can now feel that we are abreast with older civilizations in this respect.

The other is the outgrowth of Dr. Woodward's studies and successes. Three years since, our own legislature appropriated the sum of one thousand dollars to the use of the Utica asylum, to be expended as Dr. Gray might deem fit, in the advancement of pure science, especially directed to the elucidation of nerve-tissue, physiologically, and pathologically. This sum has been appropriated with the greatest success, and is renewed yearly for the continuance of the study. The difficulties that Dr. Woodward encountered have been surmounted by a special apparatus to equalize the sun's motion, so that no blur should mar the photographic lines in their infinite tenuity. The machinery that regulates the telescope was inapplicable. This has been done by one of the corps of workers, which Dr. Gray has organized for the purpose. Weeks were spent before successful cutting of brain-tissue could be made of such delicacy, that the light might make its mark; but perseverance has triumphed over all obstacles; now the work goes on. The beauty of the result is shown by revealing the strange metamorphoses of nerve-tissue in the insane. This is proved by the penetration of light into the deepest recesses of the organization. The cosmos has been questioned at an *entirely* new point. The answers may, and probably will be, quite different from our expectation; but they can only be in the line of truth, and for humanity.

All honor to our law-givers that such assistance has been rendered. This is seed sown, that never returns less than the hundredfold.

When fairly inducted into the profession, and comprehending its

Digitized by Google

attitude towards the people, I was amazed at the stupendous folly of the relation in one respect, ever reproducing the homely adage of closing the stable after the stolen steed. The utter indifference towards prevention of disease, and the absolute inattention to hygiene, were facts of universal application. To me, the dream of a profession set apart to warn and prevent, was one that seemed too remote in view of the history of the past, to be ever realized in my life-time.

Civilization has had its exponents—many efforts at definition have been made, with but indifferent success. Even Guizot attempts the matter by illustration. But may I not ask, is not civilization best known by its refinements in professions? The subdivision of arts and art-practitioners, renders necessary so much of mutual dependence, that the perpetual contact softens the asperities of harsher natures. The perfection of results refines the community, and every subdivision elevates it to a higher plane. The priest and the king are one person, only in rude communities. The metaphysician and the physician early parted company. The profession of medicine long since recognized its specialties, and now we seem to be developing the man that I think is to confer more benefit on the race, than any other in the lines of physical research. Of course you anticipate the name, hygienist, formerly, and even now, only a medical philosopher who could give fragments of time from an over-worked life in therapeutical activity. Such studies as hygiene afforded, were but his amusements. However, the best work of this world has been done for bread; a steady pressure and support from labor result in the greatest triumphs. The hygienist must receive professional remuneration and consideration, if permanent good is expected. The whole physique of city life will undergo change, and almost every problem connected with it, needs improvement. We see, already, in what direction much of this is to be done. But how little has been done. Cities are almost necessarily perched on river, or sea-bluffs, more often fluviatile. Until lately, who, in the arrangement of sewers, has studied the seams and fissures of the ancient river beds, upon whose edges are now planted the dwellings of man? How many inquiries with reference to rock-seams and earth cuts that filter down upon his walls waters of poisonous miasms? Only last evening we witnessed how little, though we could also see the magnificent results from this beginning. And so on, to a thousand other questions, not yet an-

Digitized by Google

swered. The architect is asked for security for the house, but the hygienist is not consulted for the security of the inhabitants.

Are we not on the eve of such a change? That one will not work without the other.

It is one of the fond illusions of our people that we are highly civilized. We have conveniences of travel, hotels and railways for conveyance and rest of man; houses where we are warmed and lodged; religion and schools soften and instruct; law asserts its power, and national strength develops with amazing rapidity. But with all the conveniences and luxuries, do the daily walks of mankind show much improvement in those things that constitute the highest behests of civilization? Do they reflect evidence of personal advancement? Does increased refinement of manner keep pace with increased luxury of surroundings? Does courtesy expand with the easy chair? Do our railway manners surpass the amenities of the stage coach? I fear our democratization has not advanced our politeness. But in its more serious and important aspects, has our daily walk made any great gain? Do we lie down and get up; do we eat or move with such regard to the laws of health, as may be the evidence of higher culture in scientific matters? I simply declare that in some of the most important respects we are barbarians. But such sweeping statements demand particulars. In one matter I can speak with freedom, for I know my audience.

In this land of plenty is there not more truth than wit in the reputed saying, that "God made the food and the devil made the cooks?" I except the few who are competent, and speak but of the mass. I appeal to those whose lot has been cast in country practice. Is not the cooking on the farm simply absurd and execrable, tried by any standard whatsoever, gastronomic or hygienic? This, at one sweep, takes in a huge population from which is drawn the youth for duty in most walks in life. Let me not be misunderstood—I do not expect Bridget to be a pupil of Soyer any more than the farmer's daughter; but has any culture penetrated in these directions? Can beef or mutton soaked in grease, and hardened by the extreme condensation of the albuminoid elements in the so-called process of frying, so ingeniously mismanaged as to coat every fiber, be other than prolific of dyspepsia—and this is a constant mode of the farmer's breakfast, and even his other meals. Could any device be more perfect to prevent digestion? But on the subject of bread, great expectations are raised in presence of the splendid cereals of our country. The expectations are properly

Digitized by Google

raised, but not the bread. Some progress, however, is made—it is occasionally bread. But the result is usually a nefarious substitute of hot dough under various titles. The women, overtasked, often in the production of these absurdities, keep up a failing nervous system by the use of strong tea. Both the farmer and his wife seek advice together for the same trouble proceeding from diverse causes.

I once heard a distinguished divine describe a scene in the Kurdish mountains. The party had undertaken a cross-cut to Cabul through parts not easily controlled by the Pasha of the district. They were seized and robbed, and after a long consultation it was determined not to kill them. With the strange mutation of temper incident to barbarians, when they had decided to let the travellers live, they crowded around them in the utmost confidence in Frankish skill, demanding medicine for their numerous ills. The gentleman had medical knowledge, and on proceeding to investigate the nature of the sufferings, which the robbers were loud in proclaiming, he found to his astonishment that there was little to prescribe for, but dyspepsia. "I thought," said he, "that barbarians had barbarous stomachs and would digest whatever of nutriment was found in the material that happened to be ingested. But I found they were worse off, notwithstanding their out-door life, than our own community." This resulted from the crude food they constantly consumed.

Hence, we have relied too much in rural districts, upon the out-door life and hard labor of the inhabitants to maintain high health, which indeed it generally does, in defiance of the simplest sanitary regulations of diet.

If we go into the city there is enough to change. How few people dine. There is a flying newspaper statement, perhaps a reporter's joke, but I give it my solemn credence, that the average time as proved by statistical inquiry, for an American to eat what he calls dinner, is precisely six minutes and forty seconds. In the curriculum of the medical school the teacher of practice dwells on the dangers and diagnosis of fevers, tuberculosis, and the phlegmasiæ. The young practitioner is astounded at finding that nearly all his prescriptions must be for some form of dyspepsia. The statements of its protean forms would require too much of the time allotted to the curriculum, and the teacher wisely omits it as the least dangerous of diseases, and most tentative in its treatment. But I do not propose a discourse on the subject of Hygiene, for we cannot turn in any direction without finding the problem of life choked

Digitized by Google

with error. Thus, in our cold climate even the luxury of warmth in a large house is scarcely to be had, but by the various modifications of the furnace. The cast-iron pot prevails, and from its use we have but recently learned the presence of carbonic oxide in the air. though we knew its baleful effects. Even ventilation has created a great breeze of talk, but a small one of air. The struggle for existence presses us in a myriad subtle ways, and we are learning that it is not enough to be merely fed and housed.

I have, however, no fear of the people when they fully understand the case. It is our duty to instruct them. It is naturally placed upon us, and we may not avoid it. In all ways we must press through the dense ignorance that prevails.

But I began by finding the out-look cheering. I find it so because the audience is gathering. Our journals of popular literature find their readers look for scientific knowledge, and in them it is for the first time spread out. A great metropolitan paper has recently improved its fortunes by publishing a scientific sheet that is also a book. It finds a response in the gathering audience which it will also increase. Only last Friday a friend in my own town finished a short course of chemical lectures to laboring men. In his modesty he proposed a small room, but the only one accessible was large. He objected, because it would be unpleasant to speak in an unfilled space. After the first lecture the crowd was admitted by ticket—and this audience was almost exclusively composed of laborers and mechanics, whose only objection to the course was its brevity.

As similar test of civilization, we may refer to *culture*. In certain directions we are surely behind the ancients. The great attention paid to physical development, surpasses our own. The small communities of Greece demanded this care of the individual in their fierce struggle for existence—and commanded the "survival of the fittest." So in eloquence there has never been, and can never again be, such attention paid to elocution, for the reason that the demand can never be the same. No community of such linguistic culture can again be brought together to be swayed by the voice in the absence of print. The press has forever destroyed this kind of culture, by removing its motive. Its object is reached by an easier path; but, wherever culture could act, the ancients were our equals, and indeed our superiors. Their mastery of language was superb, while their ignorance of science was profound. Cato could have the temerity to write a treatise on the best method of

Digitized by Google

treating horses, mules, cattle and slaves, and at the same time deplore the advent of the Greek physicians (the only exponents of the science of the day), because they filled the minds of the Roman youth with doubts of their gods.

Cæsar, while carrying on the campaigns in Gaul, found leisure to study language. "He corresponded," says Max Muller "with Cicero, upon the complexity of the dative case, insisting upon its division." To Cæsar, the Latin tongue owes its ablative case. The anecdote gives one a good idea of the mental activity of the superior minds among the Romans.

Of our generals, perhaps Sherman exhibited during our great campaigns most aptitude in scholarly communications. But, I doubt, if in his famous march to the sea, he was inditing letters upon language to any member of the Philological Convention. The efforts of the ancients were bestowed upon personal culture and metaphysical studies. In the latter, the instrument to examine and be examined, was perfect as at present, and the mind could ever be introverted with as much facility as now. Hence, the deductions were the same, and as minute as those we make; resulting in the same difficulties and producing the same controversies. On the other hand, the study of physical science requires elucidation of process after process—the discovery of one fact clearing the vision for the next, thus making the advance, if slow, absolutely sure. This clearance of the ground before us renders the great discovery possible, and many men will see the same thing, at so nearly the same time, that there is a constant struggle for the honor of priority. This, too, by the honest, independent discovery of the same fact.

It is well known that Newton's great thoughts were evolving at the same time from a German mind. How much controversy have we just witnessed concerning the discovery of anæsthesia. Two years before it was announced, and in my early professional life, while sitting in my office, a dentist came in to ask advice concerning an extremely nervous female patient from whom he had extracted a tooth, and who required more to be drawn preparatory to further dental operations. Her hysterical sensibility prevented him from executing the task. The sight of the forceps barred the way, but a student sitting by who had suffered much himself from nervousness and headache, immediately proposed that ether should be poured upon the handkerchief, held over the nose and mouth, and thus

Digitized by Google

inhaled until she should become quiet. "For," he continued, "it always quiets me and produces sleep." This was done—the teeth were drawn. When the operation was finished, the patient expressed amazement that she had had no pain. And we did not make the great discovery!

I have no faith in the progress of the world but by scientific methods—knowledge and the correct application of its relations. I would have the elements of what are called the sciences taught in common schools. Much is objective, and therefore not only comprehensible, but enjoyable, by the young. There is much of physics, and chemistry, and geology, and astronomy, perfectly intelligible to a boy of twelve years of age. I once read of a teacher in a country school who had found his vocation. The scholars were alive with enthusiasm, and astonished the households with the doings at school. The commotion puzzled the parents, grave consultations were held over the disorder and waste of time going on in this seat of learning. The school committee finally dropped the plough-handle and went to examine into the new-fangled ways, that, since the memory of man, for the first time had rendered the school-house the most attractive place in the district. Something must be wrong. The teacher was trifling away his time, and not earning his stipend. Accordingly he was asked to exhibit his mode of instruction, which was cheerfully, and even enthusiastically, undertaken. At a word the scholars rushed for the lawn and began (to the committee) a bewildering maze. To the children it was clear as light, and they carried off, in half an hour, conceptions that a month's instruction in books could not have given. A large boy with a blazing head-piece took the centre, and the planets immediately revolved in their orbits. A mercurial little chap, of course, ran rapidly round the sun; the beauty of the school came next; a dull clod of a fellow personated the earth; a red-head stood for Mars, and so on to the end. The committee, dumb at first, and doubting the sanity of the teacher, directed him to "quit his nonsense and go on with the regular teaching." The children took to syntax and dullness. That teacher must be found again. But the processes that these studies induce and demand are of far more advantage to the scholar than the facts of his knowledge. In acquiring this we keep too near the professional idea. By this I mean, we wish the education to keep too close to the avocations of life. The result must be immediate. Hence, the great land-marks of school education have ever been the three R's of the school-com-

Digitized by Google

mitteemen, namely: reading, riting and rithmetic. This makes the common school professional from the start. The boy can use them and must have them in any station above a day laborer. But the culture of the mind a little beyond, so as to put the mass in communication with the great thinking minds of the world, is an extravagant outlay. Says a great man, "next to being a genius is the ability to appreciate one." If we are to have an audience, it must be able to understand the speaker. In the affairs of the world, when genius is not to be calculated on, we substitute drill. The men of science bring their processes to the commonest understanding, but there must be some drill.

The methods are, however, of more consequence than the facts, though the facts must be the exponents of the methods. The inductions of the geologist are perhaps among some of the best illustrations of the methods. How many vain attempts to deny the deductions! This is a matter that I am not sufficiently competent to speak of, but I must use one fact to illustrate the nonsense that has been uttered against their inductions. The finding of organic remains in the rock was too plain a fact to be denied; but was met by one set of reconciliationists by the undeniable proposition that the power of God was competent to place the medallions in the strata to show forth his greatness for some good reason unexplained. The statement is profoundly true, and the man that made it an infinite blockhead. No such could be hazarded with a little scientific education.

If I may be allowed to allude to a loathsome subject in this connection, I have a firm conviction that the only reliable remedy for quackery is the general training of children of both sexes in the direction marked out. As regards the higher education, inasmuch as it can be in reach of the few, perhaps it is not worth while to say much. The rich, in a certain way, attempt its attainment by their children. This usually takes the form of literary culture for the boys, and showy accomplishments for the girls. Is it not in the experience of every physician within the sound of my voice, especially of those in urban practice, that such culture seems to sharpen the nerves to the highest absurdities; for them nothing is too subtle. They die of "aromatic pain," and propose relief by still finer methods. Argument cannot reach them; any doubt of their observations is met by some statement like this: "You do not know what might come from these delicate forces. Look at the magnet. You cannot see how it acts." As a test of the kind of culture most needed, I have looked around among my friends for those who are captivated by

Digitized by Google

quackery, and failed to find any who have the least pretense to scientific knowledge. There is a purpose, then, in a kind of instruction which is not merely professional but personal; not the trinity of R's, which is only the protoplasm of knowledge. The liberal education of the day remains to be completed by more instruction in physical science. There must be more solid mental pabulum, but not to make professional men; this can only be done in professional schools.

The geologist must take the field, the chemist the laboratory, and the astronomer the observatory. This is patent to all. Many definitions have been made of the condition known as a liberal education; much controversy has grown from it. With most, it is difficult to disconnect the professional idea. This must be abandoned entirely. On a former occasion I essayed to define the character and purpose of a liberal education, and have had no reason to reform the definition. I regard it as one so far advanced as to put its possessor in relation to the minds of the great thinkers in all forms of knowledge. As regards the great mass, this is simply impossible, but a beginning is found by the scientific method.

It may be asked, to what conclusion does this discourse tend? The government uses large sums for exploration. Men of science are selected and paid to thread the streams of the far west, to scale the mountains and make observations for geographical purposes. The naturalist brings back descriptions of the fauna and flora. The geologist does his work through rock-cut and cañon. Expeditions go to the antipodes to catch the fleeting moment of the transit of Venus. True, the age is big with enterprise, and much of this work is entirely at the will and fancy of the employed. But there is higher work still. There are the Galvanis, the Liebigs, the Newtons, the Davys, the Tindalls, and Agassiz, who should be of our country.

The candidates for employment as hygienists will be as the locusts, when State and municipal governments awake to their necessity. We may and must have inspectors to carry out hygienic discipline. But the working chemist, whose life may be spent in his search for the different sewer poisons, must contribute his time without reward.

The selection of the high-priest has ever been a source of anxiety to a nation; and the prophet of science should be chosen by his people. Competition will open the road only to the worthy.

Success in one direction will open the way for others. Let us not stone the prophets nor slay those that are sent unto us.

Digitized by Google

ARTICLE III.

Injuries which happen to the wrist-joint and to the parts in its vicinity, as results of falls upon the hand.

An examination of the evidence on which is based the establishment of the occurrence of luxations at the wrist, and radio-carpal articulations.

Also, a consideration of the nature of the deformity, of the symptoms and of the treatment of Colles' fracture, with a *résumé* of the literature of this subject, being the MERRITT H. CASH prize essay for 1874. By THOMAS K. CRUSE, A.M., M.D., Surgeon to the Out-Door Bureau, Bellevue-Hospital, Member of the County Societies of New York and Westchester, etc.

Many and excellent are the treatises which have appeared from time to time on the subjects of dislocation of the wrist, and fracture of the inferior extremity of the radius. This fact makes an excuse necessary for again calling attention to that which has already been so abundantly studied. Falls on the hand producing forcible extension of that member are, when the violence is of a certain degree of severity, followed by contusions, dislocations, or fractures. The right understanding of these results, and the reason of the occurrence of one in preference to another in any particular case, can be had only by considering them together, and comparing them with each other, since they acknowledge a common cause, are accompanied by a certain train of symptoms, and have certain of these symptoms in common. Hitherto these lesions have been spoken of as if wholly unrelated. Again: A study of the articles on Colles' fracture in the surgical text-books, reveals the most diverse views on the nature of the deformity, on the symptoms and on the treatment of that accident. The abundance of theorizing has been productive of confusion worse confounded, but in many of the most valuable monographs, discrepancies are more apparent than real, and some sort of order is attainable from the seeming chaos.

The object of this paper is to settle definitely the questions of the occurrence of dislocations of the wrist, together with the cause of the deformity in Colles' fracture, and the best treatment thereof. In order th t the writer may not be accused of presumption in speaking thus confidently of succeeding in that which so many distinguished surgeons have attempted and failed, he begs to say, that his materials have either not been used, or used but imperfectly before, and these materials are necessary for the solution of the

Digitized by Google

questions proposed. Observation of forty preserved specimens of Colles' fracture, in the museums of New York and London, a greater number than that seen by any other writer, dissection of four recent specimens in Bellevue-Hospital dead-house, abundant opportunities for treating every phase of the injury, and its every modification, production of artificial fractures on the dead subject, and, lastly, examination of everything of value that has been written on dislocations of the wrist, and fractures of the inferior extremity of the radius, will, it is hoped, give these subjects a more extensive basis of fact than they have hitherto enjoyed.

The best treatises that have been written on this fracture are not of recent date. Let any one read fracture of the inferior extremity of the radius in Holmes' surgery ;* or in the lately published bulky-book of Gant,† and then let him turn to the monographs of Malgaigne,‡ or of Voillemier ;§ let him compare the weak, unauthoritative words of a book professedly written for reference—for a court of last resort, with the terse, clear diction in which Voillemier's well-developed theory is embodied ; let him do this and be convinced that it is time for a resurrection of the oldest and best authorities.

The immediate results of a fall on the palmar or dorsal surface of the hand, comprise sprains, fractures and dislocations. Again : Colles' fracture may be complicated by a dislocation, by another fracture, or by both dislocation and fracture together, and is constantly accompanied by a sprain, which latter, as we shall see later, declares itself by a certain constant sign. Dislocation of the wrist, uncomplicated except by sprain, is denied existence by some writers. Its consideration should not be divorced from that of Colles' fracture, since these lesions, assuming the existence of the former, require a differential diagnosis. Indeed, the greater number of reported wrist dislocations are but Colles' fractures, some unusual appearance of the fracture leading to this once common error in diagnosis. Fractures of the radius other than that of its inferior extremity, and sprains, are best considered as complications of the graver lesion, or merely as varieties of its phenomena, whilst dislocations demand special attention, which will now be accorded them.

---

* A System of Surgery, etc., edited by Holmes, New York, 1871.

† Science and Practice of Surgery, by P. S. Gant, F.R.C.S., Phil., 1871.

‡ Mémoire sur les luxations du Poignet, et sur les Fractures qui les simulent, par J. F. Malgaigne, D.M.P., Gazette Médicale de Paris, 1832, p. 730.

§ Archives Générales de Médecine, 1842, t. XIII., p. 261.

Digitized by Google

Let it be premised, that wrist-joint injuries from other causes, are not considered. We are concerned with falls on the hand only.

First, a few general considerations.—Malgaigne is the author of a very ingenious attempt to connect falls on particular eminences of the hand, with results varying according to the anatomical conditions of these localities. To put it concretely—falls on the hand are either on the palmar or dorsal surface, in the former case, the *talon* entire, the thenar, or the hypothenar eminence receiving the greater part of the shock, and when one of the subsequent list of injuries results in preference to another, the reason of such eclecticism is to be found in the peculiarities of that one of the above-mentioned parts of the hand, which has sustained the impulse.*

The following is the list of fractures and luxations, given by Malgaigne, as resulting from falls on the hand :

I. Fracture radius, inferiorly ..... Common.
II. Fracture radius, inferiorly, with incomplete luxation ulna ..... Common.
III. Fracture of both bones, inferiorly ..... Rarer.
IV. Fracture radius, inferiorly, with complete luxation ulna ..... Rare.
V. Fracture in general (inferiorly (?) Ed.), with opening in soft parts .. Rare.
VI. Fracture radius, inferiorly, with compound luxation ulna ..... Rare.
VII. Luxation forwards of forearm on wrist, or luxation backwards of carpus on forearm ..... Two doubtful cases.
VIII. Luxation radius with fracture of radius ..... One case.
IX. Luxation of radius alone ..... No case.
† X. Backward luxation of forearm on wrist, or forward luxation of carpus on forearm ..... No cases.
XI. Fracture ulna, inferiorly ..... No case.

The above extremely-nice and subtle analysis is vitiated by the author himself, as he stops far short of carrying the idea to its logical conclusions. Thus, the results of *talon* falls are said to be fractures of the forearm, anterior contusions, fracture radius and luxation ulna, and complete or incomplete luxation of the bones of the forearm forwards. Now here, several lesions are mentioned which elsewhere are discussed under thenar and hypothenar falls, whilst others mentioned in the discussion are omitted in the presumably-complete list given above. This leads to so much confusion, that the whole thing is practically valueless as a guide. If each particular way of receiving the impulse had been shown to possess constant results, and proof given of this connection, the essay would have accomplished a professed purpose of the greatest interest and importance. Apart from these elements of error in the paper

* Malgaigne's Mémoire, Gazette Médicale, 1832, p. 730, et suite.

† Malgaigne, in his Treatise of '47, speaks of Voillemier's case as an illustration, though not an uncomplicated one, of the lesion marked X in the above. Voillemier's case was really an illustration of the lesion marked VII.

Digitized by Google

itself, there are others born of observations subsequent to the time of its publication; nevertheless, the great reputation of Malgaigne is not to be diminished by a few shortcomings; and, although the classification given above, is neither complete, accurate, or even consistent with itself as annotated elsewhere in his writings, yet it is the only thing of its kind that has ever been attempted, and is useful to us as a basis for the formation of a schedule more nearly representative of the truth.

The distinction made by dividing falls on the hand into falls on the talon, and on the thenar and hypothenar eminences, is too fine for practical purposes; nor does it invalidate accuracy to confine the etiology to falls on the palm of the hand. Falls on the dorsal surface of the hand will be spoken of later, and reasons for excluding them given. As for the division mentioned above; if accepted, there is a warrant for increasing the number of possible methods of contact of the hand with the ground indefinitely, and for insisting on a special result in each case. It is not denied that the manner of the fall may affect the result; it is very probable that, when the radial side of the palm bears the greater part of the weight and impulse, the structures on that side are invaded to a greater extent than when the ulna border is the place of resistance. Still, it is mantained that this is one of those questions to which we can have naught but probabilities for answer. Experiments are nugatory, and who, even if he remembers that the palm of his hand was spread on the ground, can say he leaned more on this side than on that. Further: these expressions are very imperfect conductors of the idea of fixed locality. The "*talon*" of the hand is supposed to be the analogue of that part of the foot which projects behind the axis of leg; and this is the whole meaning of a term used to give anatomical precision to a description. As for the designated thenar and hypothenar eminences, they are of that uncertain extent which is characteristic of tegumentary landmarks. But above all, these terms should be discarded, because there is a doctrine, which of late years has become a demonstration, that the chief etiological factor of Colles' fracture—and there is no reason to think that it is not of dislocation also—is forced extension of the hand. Hence, these accidents are independent of direct pressure wherever applied.

First.—*Disclocations of the hand.* (*Dislocations of the wrist; of the carpus; of the forearm; of the radius and ulna.*)

Malgaigne gives an interesting historical review of these luxations, of which partial use will be made.

Digitized by Google

The Hippocratic writings contain a clear exposition, of which it may be said, as illustrative of what medical tradition really is, that Marjolin,* Boyer,† and Sanson,‡ in their descriptions of these dislocations, published about Malgaigne's time, acknowledge the same four varieties as Hippocrates, and almost in the phraseology employed more than two thousand years before by the old man of Cos. "The joint of the hand," says Hippocrates, "is dislocated either inwards or outwards, most frequently inwards."§ As cardinal symptoms are given, inability to flex the fingers for the inward dislocation, inability to extend the fingers for the outward dislocation. Further: the whole hand may be displaced, in or out, to this side or that, making in all four varieties. "Sometimes the epiphysis is displaced, and sometimes the other of these bones is separated."

Of this book, "De Articulis," Dr. Adams says, "it was thought genuine by the ancient commentators from the disciples of Herophilus the vivisetor to Erotian, Galen, and Palladius, and by moderns until rejected by Grüner because of its inconsistent language." Dr. Adams is not quite correct. On looking at the original, it will be seen that Galen, ever acute, anticipated Grüner, disputing the authenticity of the first passage, in which the "joint of the hand" is said to suffer dislocation backwards or forwards. It is best to be of Galen's opinion about the first passage, for the reason that it is difficult to conceive of Hippocrates, in one sentence, limiting dislocation to two directions, and immediately thereafter acknowledging four displacements of the hand.

Malgaigne takes the word translated epiphysis by Adams, to mean, when in conjunction with its verb, incomplete luxation of the ulna. Although this would be equivalent to crediting the sage with observation of one of the concomitants of that fracture of the radius which was really described under the name of luxation, yet the opinion of Malgaigne is as erroneous as that which he deprecates in Desjardins, who thought the word referred to the inter-articular-fibro-cartilage. In the first place, the context should have guaranteed against error, since, after the epiphysis is said to be displaced occasionally, the words, "other of these bones," evidently meaning the ulna, is written in an antithesis disclaiming all connec-

* Dict. de Médecine, Vol. XIII, Paris, '25, p. 356.

† Traité des Mal. Chir., Vol. XI, Paris, '31.

‡ Dict. de Med. et de Chir. Prat., Paris, '34, p. 252, Vol. XI.

§ The genuine works of Hippocrates, translated by Francis Adams, LL.D., "On the Articulations," London, 1849, p. 596.

Digitized by Google

tion with the first part of the sentence. Apart from this, the error sprang from trusting a Latin translation,* which renders the word *ἐπίφυσις*, *appendix;* and as Rognetta† says, who criticised Malgaigne's interpretation, the reference, truly interpreted, is to what de Mercy calls in his French translation, separation of the epiphysis of the radius.

To the authority of Hippocrates is chiefly chargeable the universal error, first dissipated by Pouteau, Colles, and Dupuytren, by which fracture of the inferior extremity of the radius was taken for dislocation of the wrist joint.

Galen retained Hippocrates' nomenclature: Celsus changed it. Celsus and his successors. supposed that by luxation inwards, Hippocrates referred to displacement of the carpus to the dorsal side; and by luxation outwards, displacement to the palmar-side. Now, if Hippocrates was wrong in observation, he was logical in reasoning. Very properly for dislocation of the forearm to the dorsal surface of the carpus, the sign was inability to extend the fingers; the carpal prominence anteriorly keeping the flexor tendons tense and the fingers flexed. Inability to flex the fingers characterized the opposite displacement. Celsus retained these signs but gave them a totally different significance. By a fatal misunderstanding, he mistook Hippocrates' meaning, supposing the carpus to be called the dislocated part; whereas, the sage meant the forearm so to be regarded. The Roman gentleman and surgeon rightly judged that the distal member should be looked on as dislocated from the proximal; but this advantage was more than negatived by the incongruity between symptoms and conditions, resulting from mistaking Hippocrates' terms. The dislocation of the hand forwards upon the forearm, was held to cause extension of the fingers: the opposite condition, flexion. This patent absurdity was believed in, simply because it was supposed to be Hippocratic doctrine. Writers preferred to trust to the great authority, rather than to their reason.

We find that the revival of learning effected no change in the general acceptance of the ancient dictum. The four dislocations supposed to happen to the wrist, satisfied the idea of symmetry, and even Duverney and Fabricius of Aquapendente, received the doctrine without dispute. Platner and Callisen were the first who entered a protest. They took exception to the supposed latero-radial disloca-

* Edente Haller., Tom. I, p. 346.

† Gazette Médicale, Tom. XII, p. 563.

Digitized by Google

tion, and Scultetus denied existence to the displacement to the ulna-side.

Before Duverney wrote, Petit had rescued Hippocrates' reputation from the violence to which Celsus had subjected it. and not only pointed out the proper conditions to which extension and flexion of the fingers belonged, but likewise greatly elaborated and improved the old doctrine.* Petit deserves great praise, for at the time he wrote, the surgical text-books contained either erroneous doctrine or were silent on the subject.† Petit says, "if the palm of the hand strikes, the wrist suffers a forced extension, and the heads of the bones of the carpus are thrown to the side of flexion." If the back of the hand is the surface of contact, the carpus is thrown to the side of extension. The symptoms given, are the necessary extension of the hand and inability to flex the fingers in luxation of the carpus backwards, and the contrary for forward luxation of those bones.

B. Bell again called attention to the relatively-great frequency of the backward luxation of the carpus, or really to the frequency with which fracture of the inferior extremity of the radius is marked by a projection on the dorsal surface. This observation was original with Hippocrates. Bertrandi developed the doctrine of Platner and Callisen, whilst Scultetus, who, as stated above, denied lateral luxations an existence, showed by an anatomical discussion the impossibility of such displacement; at least without accompanying fracture of the extremities of the bones of the forearm. Pouteau,‡ Desault,§ and Colles|| now contributed, each as to his ability, to take the last step that was to emancipate this victim of surgical tradition from its confusion with a lesion of a wholly different character. Still, these authors' researches had but limited diffusion, and it is not strange, therefore, that before Dupuytren set himself to revolutionize opinion on the same score, many distinguished teachers were found re-affirming an already exploded doctrine. Thus S. Cooper¶ in his dictionary swallows the whole four displacements, saying, as said Desault, that these parts, about the wrist, are

* Œuvres Complètes, de J. L. Petit. Paris, 1844, p. 73.

† Sabatier's Chirurgerie de la Motte, 1771, has nothing. Heister, published about 1790, has a few words.

‡ Œuvres Posthumes.

§ A Treatise on Fracts. and Luxs. By P. J. Desault. Edited by X. Bichat, Phil., 1817, page 203.

|| Edinburgh Med. and Surg. Journal, 1814.

¶ A Dict. of Pract. Surgery. By S. Cooper, N. Y., Vol. I., page 431, 1822.

Digitized by Google

the most subject to violent causes, and possess the least means of resistance. Even Sir Astley Cooper believed in the classical four, but was careful to say he did so from authority alone. Richerand,* Boyer, Delpech, Leveillé, Monteggia,† acknowledged these dislocations without question.

It is well known that Dupuytren changed all this. He formally denied that up to his time any real case of dislocation of the carpus on the forearm had been published, except such as ensued from relaxation of the ligaments. He did not deny the possibility of the lesion, but by an anatomical discussion labored to prove the improbability of its occurrence. Since his time, certain incontestable cases have been published, as well as others of a disputed nature. These instances will now be noticed.

First, in conformation of the displacement of the carpus on the dorsal surface of the bones of the forearm—or, as known to Cooper, Malgaigne and their followers—forward dislocation of the forearm.

Ravaton, in Cruveilhier's pathological anatomy, relates the case of a boy who was supposed to have sustained the injury in question. The cause was a fall from a tree, and in the fall the hands were extended. Both wrists were affected, and on the left side the inferior extremities of the bones of the forearm penetrated the skin. Reduction was effected, and perfect recovery ensued in two months. Dupuytren rejects this case; but really Ravaton's description is so meagre and unsatisfactory, that positive assent or dissent is impossible, and with Malgaigne we must remain neutral. For the decision of the question with which we are occupied, this particular observation is useless; the presumption is against it; the burden of proof is on its side; and in such case, if one man's judgment is to be accepted at all, the phraseology must be such as to carry conviction, even to a prejudiced mind. This text finds application to other reported instances. Dupuytren, then, did an unwise thing in attempting to disprove individually this or that published case. These attacks only exhibited him in the light of eternally begging his own question. His immense experience had never shown him luxation at the wrist joint; the presumption then was strongly against the validity of cases published under that caption. Nevertheless, there existed a bare possibility of the truth of these relations; but in the published cases, the omission of necessary data

* The Lectures of Boyer on Diseases of Bones, arranged by A. Richerand, Phil., 1805, page 87.

† Tratto Delle Mal. Chir.

Digitized by Google

precluded intelligent judgment. Hence, to express an opinion in such circumstances, was a Quixotic essay against clinical windmills. Thomassin, writing in 1771, was an authority (?) attacked. Judge whether a respectable opinion of what was the matter could be formed from such description as this. A little child fell from a tree, and was said to have luxated its wrist backwards, so that the radius appeared through the skin in front, and the ulna was found on the same side near the unciform bone.*

The dictum of Dupuytren, so authoritatively expressed, naturally excited dissent in some quarters, and at various times, until lately, the curious spectacle has been observed of certain obscure persons, ambitious of measuring strength with the mighty Frenchman, presenting to the profession through the media of journals or societies, such cases of Colles' fracture as possessed any anomalous sign, which discoveries were straightway heralded as instances of the long sought-for luxation. If each and every such published case was a practical refutation of what the surgeon of the Hotel Dieu labored so hard to prove, then would dislocation of the wrist be the commonest thing in the world; but, as a matter of fact, this accident is of excessive rarity.

The very peculiar and anomalous signs of Colles' fracture, the absence of crepitus and mobility, and the many points of difference in its symptomatology and morbid anatomy from what is usual in fractures, are abundant reasons for a mistake so frequently made.

When Dupuytren changed his ideas on wrist dislocations, we do not exactly know. Certain it is that before publishing them in his Clinical Lectures,† Treatise on Bones,‡ and Oral Lessons,§ he taught them to his class. We have Malgaigne's authority that his belief in the frequency of dislocations of the wrist remained unshaken as late as 1819. We are ignorant of the cause of change. Colles reasoned out the truth, but it is probable that the French professor founded his belief on actual observation. Dupuytren was a devotee of the dead-house, and doubtless an accidental autopsy opened eyes that otherwise might have remained blinded. This supposition is strengthened by his method of making converts. There is a well known story relating thereto. Marjolin, who was inclined

* Jour. de Médecine, Chirurgerie, Pharmacie, etc., Tom. XXXIX, page 422. 1773.

† Clinical Lectures on Surgery, delivered at the Hôtel-Dieu, by Baron Dupuytren, New York, 1833.

‡ On the Injuries and Diseases of Bones. By Baron Dupuytren. Translated by F. Le Gros Clark, London, 1847.

§ Leçons Orales, etc. Paris, 1834. Tom. IV., page 161.

Digitized by Google

to ridicule the possibility of one man's establishing a dictum opposed to the teachings of centuries, invited him to Beaujon to witness the dissection of an undoubted specimen of luxation of the carpus backwards. Dupuytren arrived, and at the first glance, quietly reaffirmed a previously-expressed opinion, that he was in the presence of a fracture of the inferior extremity of the radius. Scalpel in hand, Marjolin hastened to discomfit the great man, and with each successive stroke, confidence increased in the anticipated triumph. At last the bones were exposed, and the face of Marjolin is said to have lengthened perceptibly when he saw the predicted fracture with comminution of the lower fragment. The surgeon of Beaujon straightway became an enthusiastic convert to the new doctrine.*

R. Marjolin in 1839 reported a case of luxation of the carpus backwards, but the displacement was complicated with a wound which gave issue to the styloid process of the radius.† If this case could be accepted, its interest would be surpassing great on account of the character of the dislocation, but although the specimen was dissected, its place must be nevertheless with the number of those useless for correct classification. The general objections above noted, apply to it as well as to the cases of Thomassin and Ravaton. Insufficient and unsatisfactory descriptions will not answer to establish the occurrence of a lesion so much contested and so rare.

Although this be the state of the case, and although the specimen of Marjolin admits many points of dispute, it may be well to indicate the weakness in a certain line of criticism of which it is the subject. Thus M. Scoutetten says, that the anterior and external ligaments only are reported ruptured, whilst luxation cannot take place unless there is complete severance of all ligamentous connections.‡ It has been said already that Marjolin was probably deceived in the nature of his case; nevertheless, exception must be taken to M. Scoutetten's objections, and for the reason, that in the uncontested case of Voillemier, the inference from a part of the report thereof, is, that the internal and anterior ligaments were there *intact*. Hence, as Voillemier's case establishes the possibility of backward luxation of the carpus even without rupture of the powerful anterior ligament—a fact, proof of which will be given

* Pratique Moderne de la Chirurgerie. Ravaton, Tom. IV, page 178.

† Thèse Inaug., Paris, 1839. Referred to by Malgaigne in the Traité des Fracts., etc.

‡ Bulletin de l'Académie Royale, for years 1840-41.

Digitized by Google

presently—much more is it possible, when, as in Marjolin's case, the attachments of that structure are invaded.

After what has been said, it is proper to state that many authorities are disposed to receive Marjolin's case as a veritable instance of compound backward luxation.

In the same year in which this specimen we have disputed was reported, M. Voillemier, specially fitted by study and previous habits of thought to engage in this question, had the fortune to see a case which proved a blessing to the surgical world in arresting the discussion of a subject which had become a bore from frequent handling.* The piece was examined by Nélaton and others, and is incontestably fixed in the history of this subject as an illustration—the only one that does not furnish some vulnerable point of attack—of uncomplicated dislocation of the carpus backwards. Even this statement must be modified somewhat. The tip of the styloid process of the ulnaris snapped off—which fact has given hypercriticism, or rather false criticism, an opportunity to object that the case was complicated with fracture. Such a claim cannot be entertained for a moment. The precise significance of the snapping off of the tip of the styloid process of the ulna in luxation, is identical with the import which this feature possesses in fracture. It is really the ligaments which ought to give way, but their immense strength is preservative, and all that the great force to which they are subjected, accomplishes, is to sever their connection with the ulna by tearing off that portion of the bone to which they are attached.

Voillemier's patient, an adult male, fell from a third story window and died four hours after admission to the hospital. The forearm posteriorly and inferiorly presented a transverse projection, and from the summit of this projection to the extremity of the middle finger, the measurement equaled the distance from the wrist joint to the extremity of the middle finger on the sound hand. Eight lines below the summit of the projection posteriorly, there was an elevation anteriorly; the plane of this elevation was highest above the plane of the hand at the radial side, and from thence slanted downwards towards the ulna. The flexor tendons passed up from the hand almost at a right angle therewith to reach the anterior elevation. The antero-posterior diameter of the

* Histoire d'une luxation complète et récente du poignet en arrière, suivie de réflexions sur le mécanisme de cette luxation et sur son diagnostic différentiel; *Archives Générales de Medecine, Dec.*, '39.

Digitized by Google

forearm above, was one and one-half inches; at the site of the elevations it was three inches, one line.

The skin was thrown into a fold, at a situation corresponding to the lower border of the anterior projection. but at the superior border of the posterior, the extensor tendons formed an inclined plane which prevented creasing of the skin. The external-lateral and posterior ligaments were ruptured, and the rest of the connecting structures so relaxed, that displacement of the carpus was permitted to an extent by which its first range could be brought in contiguity with the posterior surface of the radius and ulna. The condition of the soft parts was such as to evidence their subjection to a force greater than that causing fracture. Voillemier gives a very sensible explanation of the mechanism in his case. The styloid process of the radius was found next to the inner and anterior surfaces of the scaphoid bone, which latter had suffered loss of its cartilage thereby. Thus the radius had escaped direct perpendicular contact with the carpus by the above downward and without inward inclination of the carpo-metacarpal plane. This circumstance averted fracture; a different method of falling might have caused a different inclination of the plane, and rendered fracture inevitable.

In 1838, Padieu showed to the *Société Anatomique* the specimen of a supposed luxated wrist, the injury having been received twelve years previously by a fall from a horse.* Immediate swelling masking the true nature of the case, no reduction was attempted at the time of reception of the fall. During the ensuing year, motion was limited, but at the end of that time improvement was such that work was recommenced. The dissection showed the carpus on a plane posterior to the forearm. There was no fracture, but a suspicious backward inclination of the inferior extremity of the radius existed. The second carpal range was shifted somewhat back of the first, without destruction of the integrity of the medio-carpal articulation. It is hard to explain the above on any supposition but that of luxation; however, it was not an uncomplicated case as Voillemier's, for in all probability the deviation of the radius denoted fracture—the direction being that assumed in most cases by the lower fragment. That no trace of the break remained, is in consonance with experience, all indications being wanting in most old specimens of Colles' fracture. The same force that caused the radio-carpal could well occasion the medio-carpal displacement, the direc-

*Bulletin de la Societe Anatomique, 1838. Referred to by Malgaigne.

Digitized by Google

tion being the same in both. Lenoir is the possessor of a very similar specimen, except that it lacks the subsidiary displacement at the medio-carpal junction.* The carpus undoubtedly rested on the posterior surface of the bones of the forearm, but the radius was fractured in very complicated style—a piece of its posterior articular surface being detached and following the deviation of the carpus, as is the case in Colles' fracture. So, then, in the specimens of Voillemier, Lenoir and Padieu are found the sole representatives of this dorsal dislocation that possess the credentials of indisputable autopsic evidence. A few words on the palmar—the opposite form of displacement, must now be said.

In the correspondence of the *Académie Royale*, there is the communication of an observation of "*une luxation du poignet en avant, par M. le Docteur Malle, Médecin a Strasbourg.*"† This was published in the *Recueil des Mémoires de Médecine et de Chirurgerie Milit.*,‡ and whilst beyond doubt, is still not accepted as an uncomplicated case, since, although the radius and carpus are said to be free from fracture, no mention is made of the state of the ulna. A second case is reported by M. Collin without any such complication,§ which case Malgaigne regards as perfectly conclusive. Malgaigne subsequently changed his opinion about this case, in accordance with the report of a committee appointed to examine the specimen, which committee decided to regard it merely as an incomplete luxation. Malgaigne quotes another example, in which, however, there was fracture of the styloid process of the radius.|| As for lateral luxations, Bransby Cooper says: Complete displacement, in a lateral direction, is impossible, unless there be such general laceration that amputation is necessary. A philosophical view of the case seems to be, that in every Colles' fracture the outward displacement of the hand changes the normal relation of that member to the ulna, and that this much-talked-of *mouvement en totalité*—as is held by Lecomte and others—may be partly at the expense of the exact apposition of the radius and the carpus. Hence, it seems very proper to look on this position of the hand, in Colles' fracture, as a case of lateral sub-luxation. The next degree beyond could be purchased only by such violence as would occasion complete disorganization of the wrist joint, in which case, if the hand were deviated laterally acci-

* Archives Générales de Médecine, Tom. VI, p. 402. 1839.

† Bulletin de l' Acad. Roy. Tom. VII, p. 186.

‡ Tom. XLIV.

§ Bulletin de la Societe Anatomique, 1845.

|| Lentenneur. Bulletin de la Societe Anatomique, 1839, p. 162.

Digitized by Google

dentally, in no sense would the term lateral dislocation be properly applied. At all events, it is improbable that such a state could be caused by a palmar fall, and this is the sole etiology we are considering.

Systematic treatises on luxations of the wrist, of which Sir Astley Cooper's work will serve as an example,* attribute backward displacement *of the forearm* to a fall on the back of the hand, whilst the more-frequent palmar fall is credited with forward displacement. Here, as in fracture, these dorsal falls possess no element of certainty in result, and the rule laid down by Cooper and many others, must be taken merely as the expression of a desire for a symptomatic symmetry, which, from *a-priori* reasoning, was supposed to govern everything connected with this subject.

Brief mention will now be made of such other cases of reported luxation of the wrist as depend on insufficient-autopsic, or on symptomatic evidence alone. Some of these are undoubtedly true instances—some fire to make so much smoke; but in no case is the evidence sufficient for acceptance. The motive of their publication was often a desire in the case of each author to prove his experience greater in this particular instance than that of the great Dupuytren, and naturally equivocation, and eyes predetermined to see nothing unfavorable to the claim, have had the reward of general incredulity. First. Cruveilhier reported a case of luxation of the wrist forwards.† Specimen, taken from an adult female, showed a forearm shorter than normal, a projection of the radius and ulna backwards inferiorly, and the hand, at right angles to the forearm, slightly inclined to the radial side but could be carried to the point of contact with that side. Posteriorly to the radius, the tendons were fused together and rested in a deep groove on the surface of the bone. The first carpal range was rudimentary. The ulna descended five or six lines below the radius. The styloid process of the radius was said to rest in a cavity in the ulna. The radius was voluminous and much deformed inferiorly as if it had been comminuted, whilst a short distance up on its outer surface was seen a large conical projection of bone. The above is a specimen of great interest, but in no sense is it a dislocation. The ordinary and probably-true explanation is found in supposing the case a fracture of the radius, inferiorly. In the specimen, the outer and not inner projection of bone is the styloid process, the shortening of the radius is the

* A Treatise on Dislocations, etc., by Sir Astley Cooper, Bart. F.R.S. By J. D. Goodman, M.D. Phil. 1825.

† Anatomie Path. (in folio). Mal. des Articulations, p. 53.

Digitized by Google

sequel of fragmentary displacement, and the irregularly-shaped bony extremity tells of comminution. Though we have said the case is probably fracture, the age of the patient is the sole justification of so regarding it; for the separation is at the place of meeting of epiphysis and diaphysis, and there is backward displacement of the ulna; whilst, through injury to the cartilage, the first row of carpal bones is rudimental. The detached epiphysis, it appeared from the description, suffered a displacement forwards. A careful study of the plate in the *Anatomie* will convince the unprejudiced of the accuracy of these conclusions. Paret* gives the symptoms of a case observed by him, and Dumas† describes something very similar. Of these it is said, that they are probably luxations, as the description is not that of Colles' fracture. Lisfranc‡ is another authority of this character. M. Scoutetten, of Strasbourg, in a communication to the *Académie Royale*, showed himself well acquainted with the literature of his subject, and told the following§: A woman luxated her wrist (?) when sixteen years of age, and the specimen was obtained at her death, four years later. The fall was complicated by a machinery accident, not clearly described, and following, were diffused swelling, secondary abscesses, and a variety of chronic troubles. In the course of a year the swelling disappeared, and luxation of the carpus forwards or luxation of the wrist, was recognized by projection of the extremities of the radius and ulna posteriorly, whilst no fracture could be detected. Blandin, Velpeau, Bégin, Bouvier, Bérard, Gerdy, the committee to whom this specimen was consigned, refused to recognize its claims. If it be a real dislocation, there is almost certainty that the displacement is consecutive to the pathological processes described. Four years later M. Bouygues reported a case, which, as Scoutetten's, was incontinently snubbed by the same Society.‖ A man, nineteen years of age, fell on both palms with the result of such symptoms as abnormal extension of the hand, a transverse and deep depression posteriorly, and corresponding projection of the carpus (?) anteriorly. Difficult reduction was accomplished, but some deformity persisted until the nineteenth day. To heal general incredulity M. Bouygues added to his first report that, of movements of the wrist, pronation and supination were most affected; that the axis of the hand was much

* Thèse Inaug., Paris, 1851.

† Revue Med.-Chir., Tome XIII, p. 172.

‡ Gazette des Hopiteaux, 1836, p. 37.

§ Bulletin de l'Academie Royale de Medecine, 1840 and 1841.

‖ Bulletin de l'Academie Royale, 1845 and 1846.

Digitized by Google

in front of the forearm; that the ulna was carried *forwards* resting on the pisiform, whilst the styloid process of the radius touched the scaphoid tuberosity. Lacournère, Gimelle, and Bégin, the committee in this instance, very properly judged, that both the case and its reporter were unworthy of consideration from the glaring incompatibility of the first and second statements. This history is introduced in illustration of a previous remark concerning the disreputable equivocation that has too often been indulged in this subject. Bouygues' first description was that of the forward displacement of the carpus; the second, was a mixture of the descriptions of both the backward and forward displacements.

Haydon relates the particulars of a supposed double case.* In the left member, the styloid process of the radius rested anteriorly on the scaphoid: the ulna dislocated from the radius reached the unciform; the right carpus was in relation with the anterior inferior surface of the bones of the forearm; no fracture; reduction easy, followed by rapid restoration of motion; the ulna disjunction persisted. The above case, in default of any but symptomatic evidence, is as useless for statistics as others of the same nature noticed. Of like character are the contributions of Keisser,† and Barker.‡ Hamilton§ says he treated a backward luxation, which is detailed in his work. As the cause, is given a fall on the back of the hand. The diagnosis appears to have been made with the usual care of that distinguished surgeon, and were it not for the etiology supposed, which is very improbable, we should feel disposed to believe in the reality of the case.

After the greater part of this paper had been written, an essay, published in the *Transactions of the South Carolina Medical Association for* 1871 was accidentally met with, in which Dr. F. L. Parker reports a case of luxation of the first carpal row on the dorsal surfaces of the radius and ulna. This report was a basis for extended remarks on the injury. Although of great value in some respects, Dr. Parker's paper is useless in its attempt to establish the relation numerically between palmar and dorsal dislocations, and also in many of its criticisms, inasmuch as he has taken the words "forwards" and "backwards" from writers who differ in their nomen-

* London Medical Gazette, Sept. 1840, p. 912. "Dislocation of both radio-carpal articulations; the left carpus backwards; the ulna being also dislocated from the right radius; the right carpus forwards; ulna not dislocated from radius, and case unattended with fracture."

† Obs. d'une lux. du poignet en arrière lue le, 21me. 1843, a la Soc. Med. d'Emulation de Lyon.

‡ Gazette Medicale, 2me Serie, Tome XII, p. 453.

§ Fractures and Dislocations, Phil., 1871.

Digitized by Google

clature, and has copied these terms without inquiring whether in any particular case reference is had to the forearm or to the carpus. Thus, Prof. Parker very justly calls his own a case of backward, whilst he assigns Thomassin's to the class of forward luxations. This is a fatal blunder, for Thomassin looked on the bones of the forearm as the part displaced, and since they were luxated forwards, of course in his case, supposing it to be veritable, as in Prof. Parker's, the carpus was displaced backwards. This same mistake is repeated in several other instances.

Professor Parker's patient was a young man of seventeen. After the accident, which was a fall from a height of twenty-two feet to the ground, no complication of any sort could be detected; but this is not equivalent to saying that none existed, for the highest authorities have been deceived on this point, and hence it is insisted, that before a specimen can be received as an undoubted instance of the lesion, *post-mortem* dissection must supplement the testimony of the history. In this case, the antero-posterior diameter was twice the normal length, the lateral of nearly natural size. The hand was shortened, and the fingers flexed. A dorsal and palmar swelling existed, and both styloid processes were prominent. So far as symptoms go, this and Hamilton's case are the most conclusive on record.

B. B. Cooper gives an illustration of the backward dislocation of the radius and ulna, which he copied from a medical journal. This is of course of no use for reference.[1] Fergusson says he saw a case treated by Mr. Lizard, which resulted favorably; but concerning its variety, he leaves us to conjecture.[2] Bardeleben's Vidal tells of an old lady who luxated the bones of the forearm backwards, but no particulars are vouchsafed. The same authority records the case of a boy who sustained a similar accident. Roux gives an instance of uncomplicated epiphyseal separation, mistaken for dislocation.[3] Dumas,[4] Forget,[5] Pasquier,[6] Bouygues,[7] Boyer,[8] W. Parker,[9] René,[10] Paletta,[11] Boinet,[12] Cadge,[13] report cases, most

1 A. Cooper, Fractures, etc. Edit. by B. Cooper, p. 487.
2 Fergusson's Surgery, p. 192.
3 Malgaigne. Traite. Cited by Malgaigne.
4 Revue Med. Chirurg., T. XIII. Cited by Malgaigne.
5 Transactions Medicales, Sept. 1833. Cited by Malgaigne.
6 Gaz. des Hop., 1841, p. 169.
7 Ibid, p. 46.
8 Mal. Chirurg. Mal. des Artics.
9 Hamilton Fracts., etc. Phil., 1871.
10 Trans. S. C. Med. Assoc., 1871, p. 50. Cited by Parker.
11 Exerc. Path., 1820.
12 Bulletin de l'Acad. Roy. de Med., vol. XV, p. 50, and Nelaton, Path. Chir.
13 Erichsen's Surgery. Phil. 1859, p. 257.

Digitized by Google

of the instances resting solely on symptomatic evidence, and all unsatisfactory for authoritative reference.

The mechanism of the production of these dislocations, according to Malgaigne in his memoir, is, of course, simply direct transmission of shock. It has been explained already, that that authority designed a system of false simplicity in insisting on this direct transmission in all cases, and explaining heterogeneous results by supposing varying directions of fall. Petit was certainly wiser. He held that in falls on the palm, the wrist suffered forced extension, and the heads (?) of the bones of the forearm were thrown to the side of flexion. Nélaton objects to this, in this, that though it explains posterior displacements, for the anterior it fails. It is best not to speculate on this subject, for we have learnt nothing of it from our cases, and I, in common with most others, have never succeeded in getting a luxation experimentally; analogy, however, permits a theoretical explanation. The backward, and in all probability most-frequent form of luxation, is the rare substitute for Colles' fracture, and comes in the same way. Forced extension of the wrist causes the carpus to tend backwards, the bones of the forearm forwards, and whether it be that the radius is unusually strong, or that the anterior ligament is unusually weak, instead of the latter's causing *arrachement* of the extremity of the bone, with accompanying backward traction of the fragment by the carpus, the ligaments themselves give way, and the extremities of the radius and ulna slip downwards and forwards, whilst the carpus moves upwards and backwards, both movements being assisted by the direct weight of the body. If ligaments are found undetached in these cases, partial rupture or great straining, which latter supposition is very probable, most be supposed. Whether there be Colles' fracture or dislocation of the wrist, will depend on the relative strengths of the anterior ligament and the inferior extremity of the radius. Generally the bone is the weaker party, and for that reason fracture is much the more frequent. It is well to state frankly, that we are not prepared to deal satisfactorily with the cause of the second form of luxation. It is possible that a fall on the plane of the first and second phalanges, when the fist is doubled up, can be the cause; but dogmatism is not to be encouraged.

Although we are considering nothing that does not acknowledge this indirect violence of a fall on the hand as etiology, indulgence is asked to mention certain characteristically-irregular displacements of the wrist, dependent upon lengthening or relaxation of ligaments.

Digitized by Google

Dupuytren first called attention thereto, and although others have subsequently detailed cases, the subject has never been properly studied. The disease is observed in men who constantly make short abrupt movements, as is the case with printers, and is characterized by painless abnormal positions assumed by the carpus in flexion and extension.

Without having any experience therein, it seems proper to me to include here those pathological luxations which result from long-standing arthritis of the wrist, perhaps following Colles' fracture. This class of cases is not uncommon.

Other luxations about the wrist are said to have occurred. Desault wrote a memoir on luxation of the inferior extremity of the radius, claiming that he was the first to discover it, and that his cases and experiments proved the fact of its existence.* This is the lesion to which special exception is taken in Colles' article.† Desault thinks that the parts about the wrist are most subject to, and possess fewer means of resistance to causes of luxation than those of any other joint in the body. In a dissecting-room subject, Desault found both shoulders displaced forwards, and at the inferior part of the forearm a hard eminence on one side with a corresponding depression on the other. The hand was œdematous, the flexor tendons were pushed out(?) and adhered to the skin, the sigmoid cavity of the radius was filled with cellular substance instead of cartilage, and the radius was carried forwards, whilst the ulna rested on a sesamoid bone before the sigmoid cavity of the radius. In this case the author thinks the cause acted to produce forced supination, for on cutting the muscles away, if the bones were rotated so as to bring the radius anteriorly (supination), the capsular (?) ligament gave way, allowing the head of the ulna to pass through the opening and to take a position in advance of the radius. Pronation made the head of the ulna assume a position behind the radius. Five other cases are given, the variation of position of the ulna in each, corresponding with the variation of cause as set forth in the above experiment. Marjolin, in a dictionary article discusses the subject, but in no such satisfactory way as handled by Desault.‡ He says that the effect of extreme pronation is backward displacement of the ulna, and that the same displacement may be caused by a fall on the hand with the wrist much turned back, or on the ulna border of the *talon*. In this lesion the bones of the fore-

* Parisian Chirurgical Journal, by M. Desault, principal surgeon to the Hôtel Dieu, translated into English by Robert Cosling, surgeon, London. Vol. I, p. 72. London, 1794.

† Edinburgh Med. and Surg. Jour., April, 1814.

‡ Dictionnaire de Medecine, Tom. XIII, p. 355, Paris, '25.

Digitized by Google

arm are crossed at an acute angle, rendering supination impossible. The ulna is also capable of displacement forwards, but that is very rare indeed. B. B. Cooper writes that pronation being a much more frequently-exerted motion than supination, backward dislocation of the ulna is proportionately more frequent than forward. The rest of his remarks are similar to Marjolin's.* M. Ant. Dugès of Montpellier, starts with the assertion that until he shone on the subject of luxations of the head of the radius forwards, the matter was in darkness; but this claim is sadly weakened when, almost in the same breath, the gentleman quotes what Desault had written, having learned to look for the lesion from that great man, but nevertheless having discovered it. M. Dugès very properly expresses doubts whether any one will feel disposed to credit him with really having seen the four cases he professes to have examined. It is said that the cause in all these instances was forced pronation, and that the head of the ulna was dislocated backwards, or, what is the same thing, the radius forwards.† Another instance is reported by M. Valleteau,‡ and another by Porter, of Liverpool.§ At first sight it appears that the above, as Guérin's congenital luxations, or as luxations from relaxation of ligaments, do not properly belong to injuries resulting from falls on the hand, but Marjolin very properly mentions that a fall on the ulnar border may cause them, to which we would add, a fall on the radial border, thus inviting that criticism which is administered to Malgaigne for the connection of a definite lesion with a definite method of striking the ground. So these radio-ulnar luxations do result from a fall on the hand. To a certain extent, they occur in Colles' fracture, but generally in a very incomplete form, the radio-ulnar ligaments being ruptured but seldom in that case. Desault doubtless mistook some of his cases for the usual fracture, but the description of the dissection of others admits no explaining away, and his monograph still retains its place as the best in the language on the subject.

Summary.

By referring to page 58, it will be seen that Malgaigne acknowledges four varieties of luxations. It is true that any addition thereto must be but a subdivision of one of these varieties, but these same subdivisions are of sufficient importance to demand an arrangement

---

* Lectures on Anatomy, by B. B. Cooper. Vol. I, p. 247, London, 1829.

† Journal de Medecine et de Chirurgerie, T. IV, p. 196, 1831.

‡ Gazette Medicale, 1836, p. 250.

§ Hamilton, Fractures and Dislocs., Phil., '71.

Digitized by Google

convenient for reference.* As before stated, it will appear that the following table is not intended to comprise all, or nearly all, the cases mentioned. The object is simply to indicate such dislocations about the wrist as appear to have their existence proved by illustrative cases. Such being the case, further examination of these reports will be little else than wasting space, and confusing an otherwise plain subject. Such specimens as have been reliably and truthfully described by their discoverers, have already been sufficiently dwelt upon, and their precise significance, in establishing certain forms of injury about the wrist resulting from a fall on the hand, pointed out. These lesions will finally be presented in the form of an amendment to Malgaigne's table. In thus utilizing representative cases only, without attempting to assign places in the table to the contested, we are guided by the impossibility of determining the real nature of the latter from the original histories, by the probability that the number of cases collected does not represent all the cases reported, and by the fact that the differences in the nomenclature of the dislocated part, must cause great confusion in tabulating.

LESIONS NEAR THE WRIST-JOINT OF THE NATURE OF SIMPLE OR COMPLICATED LUXATIONS.

	Simple luxations.	Complications.	Remarks.
Must be complete, or if called "incomplete," as in Collin's case, it is understood that the carpus must override the bones of the forearm to a certain extent.	Dislocation of the carpus backwards.	Radius and ulna protrude through soft parts anteriorly.	One doubtful specimen by Ravaton.
		Radius protrudes through soft parts anteriorly.	One specimen, doubtful; Thomassin.
		Styloid process radius protrudes thro' soft parts anteriorly.	One doubtful specimen; Marjolin.
		Styloid process ulna snapped off; virtually without complication.	One specimen, sure; Voillemier.
		Fracture radius inferiorly complicates lux.	Two specimens, sure; Lenoir, Padieu.
	Dislocation of the carpus forwards.	Probably, fracture ulna complicating.	One specimen, sure; Malle.
		Fracture styloid, process ulna.	One specimen, sure; Letemneur.
		No complication; described as "incomplete."	One specimen, sure; Collin.

*Goyrand, in the Gazette Medicale, p. 59, Vol. XIV, described a luxation of the inferior extremity of the ulna without osseous deformity. Its cause is not a fall on the hand. No other writer has corroborated this discovery.

Digitized by Google

	Simple luxations.	Complications.	Remarks.
Can be complete or incomplete.	Dislocation at the radio-ulnar articulation; when incomplete, is generally accompanied by fracture inf.ext. radius.	Fracture radius, or ulna, at any part of the shafts of those bones; Colles fracture; detachment tip of styloid of ulna; fractures and luxs. carpus, etc.	Uncomplicated is rare; the complicated, common.

PART SECOND.

On Colles' Fracture.

First let us say a word of justice regarding the designation—Colles' fracture.

It is the fashion with a certain class of writers to mention this lesion as if they deferred to a vulgar error in associating therewith the name of the great surgeon to whom, without any question, belongs all the honor of its first accurate description. Sneering quotation marks, and the deprecatory prefix "so-called" often accompany the name, and that, as if the employment of such adjuncts betrays the writer's superior information. This is all wrong. The name of Colles is associated with the fracture with as much propriety as the name of Bright with certain diseases of the kidney.

Colles' fracture is recognized by everybody as belonging to the class known as fractures by *contre-coup*—by indirect violence. From this circumstance, a large measure of interest attaches itself to the study. There are bones, other than the radius, which owe their broken continuity to this variety of force, but Colles' fracture is unique, in that its production acknowledges no other etiology—in that its presence invites no speculation as to cause. This constant relation between cause and effect, wholly wanting in fractures by direct violence, affords ample and delightful scope for speculation in the questions of the direction of the force, its intensity and mode of action, and the changes effected in the anatomical and physiological relations of the part upon which it acts.

The indirect violence which causes fracture of the radius inferiorly, is a fall on the palm of the hand. This is said without modification, advisedly; for in proportion as a simple proposition is guarded with exceptions, its value as a clear conception is gone, and one must use his rule gingerly, lest he apply it in cases which are without its influence. Other causes are believed in by best authorities; hence, indulgence must be asked for an attempt to

Digitized by Google

substantiate this limitation of causation. Colles' fracture, comprising fractures of the inferior extremity of the radius at any point from the articular surface to one inch—perhaps one and one-quarter inches—above, except detachment of the styloid process or breaking off of a portion of the articular lip, is always the result of a fall on the palm of the hand.

I. There is somewhere described (the place is now forgotten), a case from direct violence. Without doubt, there can be such arrangement of the direction of a force, to act on a bone of a possibly favorable construction, as to cause any known fracture or dislocation ordinarily looked upon as the special property of *contre-coup;* still, the structure of the region of the wrist joint renders it almost impossible to conceive of Colles' fracture from such cause, and even if in such case the fracture do occur, it can no more be predicted, than the exact line of breakage to ensue can be drawn on a skull about to be struck with a hammer. The observation referred to, is thought to be the only one on record; hence, the presumption is against it, and there is abundant reason for eliminating from practice, the thought of a remote and probably non-existent contingency.

II. Malgaigne says, that of fourteen of these fractures as many as three resulted from a fall on the *back of the hand.** Hamilton is authority for another case† from a fall on the back of the hand, and in some way the action of this cause seems to be thought so common, that most authors mention it in the same breath with remarks on the acknowledged ordinary etiology. It is of first importance to know, that in no case is there record of the witnessing of the action of this cause by a competent observer. The patient himself cannot be expected to remember details of an occurrence which lasts but a second, and is immediately succeeded by agonizing pain; yet, on his testimony alone, is the subject in question substantiated. More especially must one not be too credulous, for, if a patient be asked whether he fell on the back of his hand or on his palm, he will answer at random rather than convict himself of stupidity by saying that he does not know.

I have never seen a case caused by a dorsal fall, nor think its existence capable of proof by such testimony as has hitherto been used. Experiment confirms the doubt of its existence, for, if fracture takes place from violent contact of a surface, some of the

* Gazette Medicale, 1832.

† Fractures and Dislocations, Phil., 1871.

Digitized by Google

parts of which are at right angles to each other—with the ground, the occurrence of the lesion when the fall is dorsal, is possible by virtue of forced flexion alone, the analogue of forced extension for palmar falls. Now, Bouchet experimented frequently, but could never get Colles' fracture by forced flexion. What he did get, was invasion of the integrity of the carpo-metacarpal or medio-carpal articulations with ligamentous rupture and snapping off of some insignificant portions of bone.* The radio-carpal articulation rarely suffered, and in one case only was a small part of the posterior lip of the radial articular surface detached. It is not denied that numerous falls on the back of the hand *do occur* and may be followed by serious results, or that an intelligent patient may, in good faith, report his Colles' fracture the result of a dorsal fall; but in the first case these results are really similar to those which came from Bouchet's experiments, and are not instances of Colles' fracture; and in the second, the fall is originally on the palm. but after the damage is done there, the original impulse carries the body over and the hand as well, so that when about to rise, the patient finds the back of his hand on the ground. This is the ingenious explanation of Lecomte.† The subject will be better understood when the mechanism is discussed.

III. Voillemier described two cases of undoubted Colles' fracture, caused exactly in the same way as this lesion may be made experimentally; that is, by forced extension of the hand. Since Bouchet first succeeded in making these artificial fractures, his method has been practised again and again on the dead subject, until nothing is better established in surgical pathology than that extension, and extension alone, is capable of giving this constant result of fracture of the inferior extremity of the radius. Now, in saying that a fall on the palm of the hand is the sole etiological factor, we have not contradicted ourselves, but have simply expressed concretely that which in its other form requires a process of thought to be understood—have simply recognized the fact that, in practice, forced extension of the hand is caused by a fall on the palm. It is then apparent why a case, such as one of Voillemier's, in which a man got Colles' fracture by a companion's pushing the hand forcibly backwards, is no exception to, but rather a beautiful confirmation of the dictum.

Proportion.—Malgaigne says, that during the month of January,

* Thèse sur les Luxations, Paris, '34.

† Archives Generales de Medecine, 1861, p. 81.

Digitized by Google

1830, at the Hôtel-Dieu, there were admitted ninety-seven fractures of all sorts, of which sixteen belonged to the inferior extremity of the radius, four to both bones, and two to the ulna. In the same hospital during

1827	there were	109	fractures,	10	being of the radius,	inferiorly.*
1828	"	110	"	5	"	"
1830	"	101	"	6	"	"
1818	"	81	"	4	"	"

Dupuytren was disposed to accord fractures of the inferior extremity of the radius, if not the first, at least the second or third rank in frequency; but this opinion must have been hastily given from a hasty impression, since it was natural for him to exaggerate even the frequency of a lesion in which he took so great interest. Certainly his opinion was not formed from the above figures, which, nevertheless, were at his command.

Malgaigne says, no time of life is spared, the subjects of the inquiry varying in age from eight to eighty-eight years; the same statistics make women more often the subjects than men, for, out of fourteen of these fractures in one year, eleven belong to females. This circumstance seems something more than accident, for five fractures of the ulna and two of both bones, happening during the same time, were all in men; on the other hand, other statistics reverse this order of preference. Goyrand is hardly to be believed when he says, that at the hospital at Aix, these fractures make one-third of the whole number. Fenger, during his service at the Royal Frederick Hospital at Copenhagen, had thirty-one fractures of the radius, presumably of its lower extremity, in one hundred and forty-nine of all varieties. In 1864, of one hundred and fifty-five forearm fractures treated in the casualty ward of St. Bartholomew's, Callender says, seventy-eight were Colles'. Of two hundred and fifty-four fractures of all sorts, except phalangeal, carpal, tarsal, meta-carpal and meta-tarsal fractures, and those of the skull and vertebræ, received as in-patients at Bellevue Hospital from May 1 to December 20, 1871, there were in all, including two or three double fractures, but fifteen of the inferior extremity of the radius. Of the forearm, excluding Colles', but including single fractures of the radius and ulna, there were sixteen. So far from being frequent fractures, this great hospital's experience shows them to be among the most infrequent, as they are exceeded in number even by fractures of the ribs. By the showing of the books, the most-frequent fracture

* Malgaigne's Memoire, Gaz. Med., 1832.

Digitized by Google

there, is of both bones of the leg. Of these, during the latter half of the eight months' period from May to December, there were twenty-one, more than half being compound. Certainly, we have more fractures of the leg now than formerly, for which the street Juggernaut cars are responsible, and such fractures are most often a general smash. Hamilton says, in some of his statistics, eighty-seven fractures of the lower end of the radius were found in ninety-two of the lower third of that bone.* Such a statement is of course valueless for statistical purposes, since Colles' fracture may happen a considerable distance up the lower third of a very short radius.

The obvious criticism of these hospital statistics is, that they do not represent the true proportion in which this lesion occurs, for the reason that its importance is unknown to the common people, who are not obliged to suspend locomotion for it as for a broken leg, and who are unwilling to enter a hospital for what looks like a trifle. Dispensaries and out-door reliefs have more of it than surgeons in the wards, in witness of which, see the immense number as given by Mr. Callender, of persons with it or other fore-arm fractures who come to St. Bartholomew's casualty ward. In following the out-door practice of London hospitals without definite plan, sometimes visiting the same hospital two days in succession, and sometimes not returning again for a week, I cannot recall a day in which a Colles' fracture was not put up. Likewise, at my class for general surgery in the Bellevue Hospital Out-door Bureau, scarcely a day passes that a Colles' fracture does not present itself. In private practice, one certainly meets with it often, though seldom enough when the vast number of daily falls on the palm are considered, and so, though Dupuytren and Goyrand unquestionably had exaggerated ideas of its frequency, yet it is doubtful whether there is any part of any bone in the body that breaks oftener than the inferior extremity of the radius.

The usual seat of the fracture is pretty well agreed upon. Mistakes are made in putting it rather too high than too low, but this is done chiefly by those who give opinions from other than *post-mortem* evidence. Thus, Colles thinks it is at one and one-half inches above the joint, whilst Hamilton believes he has seen it as high as Colles puts it, and as low as it is placed by anybody else. The truth is, that it is difficult to indicate distances on an uninjured radius, and much more so when its extremity is displaced. Nélaton has found the bone broken generally at twelve or fifteen millimetres

* Fractures and Dislocations, Phil., 1871.

Digitized by Google

above the joint; Smith, sometimes as low as one-quarter of an inch, generally at three-quarters of an inch, and never more than an inch; Sir Astley Cooper at one inch, and Dupuytren from three lines to an inch. The forty specimens seen by me, though all were not measured, support Dr. Smith's conclusion. As a matter of fact, no one figure is accurate; for the edges of the fragments may be at any of the situations mentioned, whilst the opposed surfaces of the bone are very irregular. This means simply, that if the edge of a fracture be three-quarters of an inch from the radio-carpal articulation, there is no certain guarantee that the lower fragment is three-quarters of an inch long throughout. In reality, accuracy is not subserved by any such observations. It is enough to know, and the fact is of the first importance, that the fracture, in virtue of the to-be-explained *rôle* of the anterior radio-carpal ligament, will always affect that portion of bone controlled, so to speak, by that ligament; and further, that as bones vary in cohesive power in their different parts, in different individuals and in different periods of life of the same individual, so will the line of fracture be dependent on the conditions in any individual case.

It would be an insult to the reader's intelligence to outrage patience by rehearsing the wearisome train of local signs, but such as are inextricably woven with the anatomical appearances are part of the difficulties that attend the subject, and therefore demand explanation. Mobility and crepitation, long observation has shown to be wanting—a fact that every theory, whether over-riding non-opposition, or impaction of fragments, has applied to its own favor. This circumstance, unfortunately, was made to perpetuate error, for in the great number of fractures reported as luxations of the wrist, it was common enough to find that the whole claim rested on some such remark as—"The luxation is undoubted, since the most careful examination has elicited neither crepitus nor mobility." Let it be acknowledged once for all, that the reason for the non-existence of these two ordinary signs of fracture cannot be stated definitely, because there are so many probable and plausible explanations, that one is in a quandary which to accept. Some think the effused blood destroys the sound and feeling, and the intimate relation of fragments the mobility, whilst others invoke the spongy nature of the bone, its entanglement with the soft parts, etc., as more likely suppositions. Smith takes exception to any explanation but that suggested by his muscular action theory; for if the spongy bone, or the extravasation prevents the manifestation of

Digitized by Google

the phenomena in question, why, it is asked, are crepitus and mobility apparent on extending and rotating the patient's hand? This, as many of Dr. Smith's discoveries, fails in practice, for the wanting phenomena often do not appear, even when the manœuvre suggested is practiced. The same species of criticism must be applied to a remark made, if recollection serves, by Malgaigne. He finds support to the effused-blood theory in observing that the decline of the swelling is attended by the rise of the hitherto-wanting symptoms. If this was so, no one else has noted it. There is one well known peculiarity about this most peculiar of peculiar breaks of bone, which seems pregnant with importance to the present discussion. When the forearm is grasped above and the carpus below, both carpus and forearm move together, as far as pronation and supination are permitted. Is it not then foolish to look for mobility and its consequent crepitus, when fragments move as uninjured bone? The statement of fact then is, that ordinarily we look for neither mobility or crepitus in Colles' fracture, but that they are exceptionally present, and in each case the phenomena are dependent for their presence or absence on the separation or cohesion of the fragments (probably). The reason of the reason—the explanation of the state of the fragments—will receive speedy consideration.

The swelling is something more than a mere concomitant of the fracture. It is dignified by a place in the list of results of falls on the hand; it is a swelling of no ordinary kind; it is the evidence of a contusion to which the soft parts in front of and above the wrist are subjected by the forcible bending of the hand to the dorsal side. Hence, with the violence of the bending back, the size of the swelling increases. It is one of those signs, the appearance of which is indicative of the amount of that violence. Hence, we find it appearing above the annular ligament, stealing up the forearm a variable distance in different cases, and often obscuring a valuable diagnosis. It is often accompanied by a lesser swelling on the dorsal surface, but the latter is never of respectable size in Colles' fracture, whatever be the bony displacement; a fact which is certainly a potent rebuke to the theory of production by dorsal falls. Though of greater import, its nature is the same as that of the swelling accompanying other fractures. Sir Astley Cooper, deceived by its hardness, and not recognizing where the fragments really projected anteriorly, thought it nothing less than the bone itself. Bertrandi saw its explanation in the crowding forwards of torn mus-

Digitized by Google

cles. Malgaigne copies Petit, who, in this, shows much superior sagacity to his successors, in declaring the swelling to be effused blood. One is often fortunate enough to see, a few days after the fracture, those rainbow tints of extravasation, as suggestive here as when appearing under the eye. This exhibit near the wrist admits no room for doubt. The firm attachment of the tendons keeps the greater part of the blood thrombus out of sight, so that it sometimes does not appear at all, and even when present, it does not look like the ordinary ecchymosis of fracture. The truth of this will be appreciated by any one who has dissected a recent specimen. The appearance was not wanting in the four recent cases examined by me, and though nothing was thought of its importance at the time, I remember being struck by the quantity of clotted blood effused in and around bone, tendon and ligament. The swelling is of immediate production; it is therefore blood. But gradual augmentation of volume, and after a few days the heat and redness sometimes seen, speak of effusion into the sheaths of the tendons, so that long after the blood is absorbed, slight swelling persists from this second cause, which likewise prevents ready gliding of the affected tendons, and gives stiff fingers. This effusion into the sheaths of the tendons is usually situated further down than that which is caused by the extravasation of blood. Indeed, Dr. Hamilton stated to me in conversation, that he found it in most cases over the carpus posteriorly, and strictly limited to that situation. Hence, in his opinion, the cause of this swelling is effusion into the synovial membranes of the carpal bones. This idea is scarcely substantiated by the anatomical peculiarities of the synovial membranes in this situation. The second synovial membrane of the wrist lines the lower surface of the radius and inter-articular fibro-cartilage above, and the three subadjacent carpal bones below, and it is difficult to see why this and the rest of the synovial membranes of the wrist joint should not share in the violence done to the synovial membranes belonging exclusively to the carpus. I have seen no specimen which would elucidate this point.

The cylindrical appearance of the forearm suggests the question, is this form wholly caused by the augmentation of the antero-posterior diameter, or, in part, by diminution of the radio-cubital diameter?

This is a question not easy of solution and practically of not much importance; but there is one point connected therewith deserving of attention. As the cause of this change in the appearance of the

Digitized by Google

lower part of the forearm, there is supposed to be a deviation of the fragments of the radius towards the inter-osseous space. Now, when there is much swelling about a locality so thickly covered by soft parts as the wrist, it is difficult to say just how much the shape of that swelling is determined by deeply-seated bony deformity. This is a consideration we can well afford to waive, but it is of much importance to determine whether the deviation of the fragments, of which so much has been said, has any real existence. For a long period this displacement was not only believed in, but held to be the most important indication in treatment. The great authorities gave elaborate and circumstantial directions to push the muscles into the inter-osseous space and to retain them there by compresses, in order to utilize the muscles as a natural pad. The only reason given for this procedure was not to restore the displacement itself, of which the sign was the retreating angle thought to be found on the radial border at the site of the fracture, but to diminish the increment to the conjugate diameter, which increase, as dependent on the said displacement, never has been established. Besides, the supposed retreating angle was but an optical delusion. It is true that the outward look of the lower surface of the carpal fragment of the radius produces inward inclination of its upper surface; but such inclination is too infinitesimal to make an appreciable inward angle at the situation supposed. The appearance is the consequence of the contiguity of the outwardly-deviated hand and the swollen lower inch or so of the extremity of the outer border of the forearm, forming an angle with that portion of the extremity above the site of fracture. Indeed, doubts had intruded into the reality of this supposed bony angle, when Goyrand called attention to the outward deviation of the styloid process of the radius, and what had been conjecture before was now supposed to be demonstration. So compresses were revived only to be laid aside again when Voillemier converted all the world to impaction, he explaining the position of the styloid process by inward penetration, and thus relieving surgical logic of a dilemma. But Robert Smith believed neither in penetration nor in an inter-osseous space, and claimed, that even if there were such a space, the very breadth of the radius itself would prevent deviation. Now, this assertion of the non-existence of an inter-osseous space and consequent impossibility of any encroachment on it by the fragments, is not so conclusive as appears at first sight. Take up the radius and ulna articulated but deprived of the soft parts, and immediately above the sigmoid cavity is seen a space,

Digitized by Google

equal in width to almost one-third of the transverse diameter of the widest part of the spoke bone. Further, let me state that I have seen in the museum of Guy's Hospital, a specimen in which radius and ulna, broken half an inch above their extremities, are firmly united by connecting effusions of callus. With such facts the doctrine of patency and deviation does not look so very destitute of truth. If deviation is present at all, it is greater in proportion to the height of the fracture above the articulation because of the progressive widening of the inter-osseous space in that direction. There are two historical observations, one in favor of, the other opposed to the doctrine, that merit notice. Without shadow of justification by any known method of proof, the pronator-quadratus muscle has been selected as the most probable cause of the inclination of the fragments. In an uninjured state the appearance of this muscle is scarcely such as to warrant its endowment with such a power, but the supposition of its action in Colles' fracture is clearly absurd; because not only is the muscle paralyzed by rupture of its fibres, but many, perhaps most recent specimens, present it torn from its attachments. The other observation opposed to deviation is, that the radius, firmly bound to the ulna, is kept of its natural length, and therefore from deviation, by the splint action of the latter bone. But this objection has been answered long since, by denying a firm, unyielding character to the attachments of the bones to each other, and by referring to the frequency with which these connections have been found either stretched or ruptured.

Mechanism of Production.

This part of our subject is of considerable historical interest. However much writers have been content to repeat the teachings of tradition—respecting the method of the occurrence of Colles' fracture their productions usually contained something original.

Hence arose a great number of theories, most of them apparently irreconcilable with each other, but, as a matter of fact, we find that, disregarding unimportant peculiarities, these diverse views are reducible to three: The *first* belongs to but a few, even of the older authorities, though one of these is Pouteau. The idea is this. As many fractures are caused by muscular action, the probability is, that those of the radius are likewise producible in the same way. As Malgaigne says, this does not merit a serious refutation. It should not be forgotten, however, that Pouteau believed in muscular action only as a great rarity, and even then, more as a

Digitized by Google

cause than a mode of action. The *second* theory was not only adopted by Malgaigne, Dupuytren, Goyrand and others, but is to be found advocated in many of the text books of to-day. At first sight it would appear impossible that any other theory could explain the production of Colles' fracture. It is that of direct reception and transmission of shock. The radius is supposed to be compressed between two forces—the ground below, and the weight of the body above, and consequently the bone gives way at its weakest part. Can anything be simpler or more consonant with common sense than this? and yet there is no greater error. The case seemed so plain to the older observer, that minor, but important circumstances were unheeded. These were never taken into account until the oft-referred-to experiment of forcible extension of the hand was first made. Thus we find Voillemier, in one of his cases, sorely tried to explain how the ordinary deformity of the fracture results from forcible bending of the hand backwards.

Nélaton does not appreciate the question at all, for, in one place he is found defending the new doctrine, and in another, showing how direct transmission is effected by the arch he invented. Without spending time in giving the opinions of other authors about the new theory, let it be understood that there was no gradual development of the knowledge of the true method of the action of extension. The facts of experiment were repeated *ad nauseam* without the first good or evil attempt at explanation, except Voillèmier's, perhaps, and this continued until Lecomte cleared up the whole subject at once. Lecomte is so dogmatic, that it is easy to find much to censure. But dogmatism can be forgiven in him for the sake of the really-great service he performed. Nevertheless, for the sake of truth, Lecomte must be subjected to a criticism, which will show wherein he has overlooked some things of importance and drawn false conclusions from others. Let us hasten, nevertheless, to accord him a due meed of praise, by acknowledging, but that for him, the succeeding line of thought would never have been suggested. Lecomte first showed that the shock could not be transmitted to the radius directly, because the impulse was "at a point situated more or less in front of the axis of the radius prolonged;" next, that fractures occurred when the forearm was at right angles to the hand; again, that extension was alone capable of making a fracture; and lastly, that the anterior ligament sustained the forces, both of distension and pressure. The present part of this essay is not a criticism of the author of the above propositions any farther

Digitized by Google

than is necessary for the understanding of our own views of the mechanism. Hence, having again alluded to the labors of Lecomte for the purpose simply of obtaining the best exposition of the theory of *arrachement*, the next step is to discover in what lies the difference between it and a theory consistent with a more rational exposition of phenomena. If any one will repeat a little experiment, so confidently recommended by Lecomte, it will be found that the result is different from what is claimed by that authority. Mark with ink the fleshy prominences over the pisiform and scaphoid bones on the palmar surface, and then thrust the hand extended, downwards and forwards, till it is in contact with a clean plane surface, thus imitating the manner of receiving a Colles' fracture. In every trial the writer made, a black mark invariably appeared on the clean surface. Lecomte denies that any such mark can so be made, which supposed fact he takes as triumphant refutation of an idea of Nélaton's, viz.: that, in falling, the first row of carpal bones, representing an arch, receives the greater part of the weight of the body on the abutments of the arch, viz., the scaphoid and pisiform bones. Deprived of its puzzling look, the fact sought to be demonstrated was, that the arch did not receive the weight of the body, nor had direct transmission anything to do with the fracture, and that, because the above-mentioned bony projections had not touched the ground. This author does not deny but that direct pressure on the radius, in the direction of its long axis, may be of some importance in the causation of the fracture, but the place of this factor is not only supposed to be secondary in importance but secondary in time. To this point exception must be taken, and, though ready to accord the due meed of importance to the instance—of fracture from forcibly bending the hand back—reported by Voillemier, yet the actual state of the case is, that both direct pressure and *arrachement* act together simultaneously. In perpendicular falls—that is, with the forearm virtually perpendicular to the horizon—the point of first contact with the ground is, as Lecomte very justly says, always in advance of the axis of the radius. This point of first contact is represented by the palmar aspect of the metacarpo-phalangeal articulation. The act of falling is not yet completed; after an interval of time, almost too short for conception, much less for a fracture by *arrachement*, the eminence immediately beneath the radius likewise touches the ground. There can be no doubt of the *virtual* simultaneous occurrence of these two components of the act of falling.

As stated above, Colles' fracture can be and has been produced

Digitized by Google

by extreme forcible extension of the hand. When those who claim for extension exclusive action in the production of Colles' fracture as ordinarily seen, they forget that by falling forward on the hand, extreme backward bending of the hand, or of the forearm, cannot possibly be effected. Now it is this very-extreme degree of extension which produced the fracture in Vollemier's case, and the artificial fractures confirmatory thereof. It is obvious that *arruchement* cannot occur until the extreme limit of extension is passed, and in the ordinary way of receiving Colles' fracture, the hand is never bent far enough back even to reach this limit. Hence the absurdity of crediting extension solely with the production of the every-day seen Colles' fracture.

These remarks are not intended to prejudice the claims of extension to be thought a part of the cause; it is not the extension which is criticised, but the mode in which it is supposed to act. With these premised observations, the case can now be understood. Suppose, in falling, the radius to be perpendicular, or slightly inclined to the ground. The fall sends the impulse, or, to give Lecomte the *coup-de-grace*, transmits directly the shock to the radius. The bone being virtually perpendicular to the ground, or in the same direction as that taken by the shock, the effect of this pressure is to jam the extremities of the radius together. At the same time there are two other forces in operation; one, from the point of contact in advance of the radius, pushes up the short arm of the lever represented by the hand; whilst the other, the weight of the body, causes the long arm of the lever, represented by the radius, to descend. Were the hand and forearm loosely connected, there would be nothing more than this; but, in the actual case, a modifying element is the connection, by strong ligaments, of the radius and carpus. By this connection there is a solicitation backwards of the lower extremity of the radius, which motion is opposed by the force acting directly downwards—the weight of the body. By these two opposed forces, the radius is broken in the same way as a stick is broken across the knee—the strong, extensively inserted, anterior radio-carpal ligament representing the knee—the point of resistance.

The many theories broached from time to time to explain the curious characteristic deformity of Colles' fracture, have made the radius literally a bone of contention, but this part of the subject possesses paramount interest, not only in itself, and as the foundation of all rational treatment through knowledge of the real nature of the accident, but likewise because it is the feature on which

Digitized by Google

the older surgeons were accustomed to rely in making a diagnosis from inspection. The "silver-fork" deformity is really a more happy term than any, expressive of a not too-obvious resemblance between pathological appearances and objects of every day use. The appearances in Colles' fracture do often remind one of a silver fork, perhaps of an iron one, too; but let the surgeon not be content to do nothing, if in an injured wrist he does not see the model of a useful table article. More often than not, swelling utterly destroys all characteristics and resemblances.

Pouteau believed muscular action could cause the fracture, and of course the deformity likewise, and this theory was universally accepted, sometimes modified by the addition of the idea of persistence of the original violence, until Diday reasoned out his idea of *chevauchement*, or over-riding of the fragments. Chevauchement explained every phenomenon—shortening of the radius, the most varied displacements of the fragments, the luxation of the ulna, etc. Voillemier changed all this. By an examination of old-united fractures, he established the existence of a line of compact tissue, enclosed in the spongy substance of the lower fragment and continuous with the posterior wall of compact bone of the shaft. This theory, with the radical objection of being born from the study of ancient specimens alone, was made to do duty until Robert Smith, with many a stinging criticism on Voillemier, returned to the first doctrine—muscular action. Nevertheless, Smith misinterpreted specimens, and the truth, so much as there was of it, was again, by the observers of best understanding, accorded to Voillemier. Thus, Lecomte adopted impaction partially, and Callender almost *in toto*.

Muscular action does not require serious refutation. This assertion may appear presumptuous, considering the number of first-rate thinkers who have labored ingeniously and conscientiously to prove its truth; but their whole edifice can be set toppling by a single objection, an objection so obvious that it is astonishing that it has not been thought of before. It is a common experience, that the artificial fracture is frequently, or rather almost constantly, evidenced by deformity every whit as characteristic as that presented by the natural. The methods of making the fracture are three in number.

I. Bouchet's—in which the foream is strapped to a table and the hand, bound to a lever, is borne backwards with a steady unyielding force. I am not aware that Bouchet used this mode of turning the hand backwards, but the principle of the thing belongs to him.

Digitized by Google

II. Nélaton's—in which the forearm is amputated at the elbow, and the ulna having been sawn off above at a level with the radius, the hand is laid flat on the table, the forearm held perpendicularly, and a smart blow struck from above on the exposed bones.

III. Lecomte's—the best of all, as it exactly imitates the accident, in which the arm is amputated at the middle of the humerus, the bone exposed, and the hand being laid on the table as before, the half of the humerus is struck from above while it is held at right angles to the perpendicular forearm. Of course there can be no muscular action in a cadaver; so the argument can well be rested here as an abundant answer to the most subtle considerations in favor of Robert Smith's theory.

In the examination of the forty specimens before spoken of, I have been taught most conservative ideas. An unprejudiced eye will see in these pathological pieces that which will lend countenance to each and all of the numerous theories belonging to this subject, and at the same time will learn from them to look with suspicion on any theory which has its own procrustean bed, on which are laid opinions and observations to be admitted or rejected as they square therewith or differ therefrom. One fact is acknowledged by most every one, that the principal cause of the deformity is the displacement of the lower fragment, and, if the previous discussion of the mechanism be accepted, it follows that the lower part of the lower fragment is directed backwards because of the displacement of the carpus in that direction. Nothing is more readily understood; the fracture has occurred, but the radial shaft—the long arm of the lever—continues to descend, and the hand—the short arm of the lever—continues to rise, carrying with it, backwards and upwards, the carpal extremity of the radius. This is the much-talked-of "*mouvement de bascule*," and is the most common and constant of all the displacements in this fracture, as is clearly enough evidenced by its being the chief agent in the production of the silver-fork deformity. A slightly-outward displacement of the lower fragment is found to be tolerably constant as an accompaniment of the backward. It is impossible to say whether, with the downward movement of the long arm of the lever, and the upward movement of the short arm, there is an outward movement combined. The movement may exist, but we have no right to assume it, nor even to make use of Voillemier's supposition, that, when the outward inclination exists, there is an unusual amount of violence at the thenar eminence. But this want

Digitized by Google

of a rational explanation is amply compensated by an empirical. Goyrand supposed that the triangular fibro-cartilage acted as a radius to the carpal fragment, and that the deviation in question occurred when the fragment stopped at the outermost part of the circle to which the ligament acted as radius. The idea was gross hypothesis, but M. Verneuil made it the basis of an exact experiment which solved the whole question.* The radius was sawn transversely at the ordinary seat of fracture, and it was then found that the lower part of the bone, abandoned to itself, suffered no outward inclination at first, but that inclination became evident when the styloid process of the ulna was detached or the ligament cut. So, when the phenomenon is actually seen in a specimen, it is assumed, either that the styloid process of the ulna is fractured, or that the ligament is torn or strained. If this be an actual occurrence, it must be looked on as an accompaniment of another possible cause suggested by the position of the carpus. This latter not only follows the fragment in its backward, but also in its outward displacement. It may be that the radius, pressed between the weight of the body and the ground, seeks to escape laterally, and for some reason chooses the outer side. But this subject is removed from the certainty attending the explanation of the backward displacement. The angle at the superior part of the carpal fragment and the inferior part of the long fragment is the cause of the anterior bony projection, when the short fragment suffers its usual *mouvement de bascule*. I know of no specimen which countenances any other view. As to the true displacement of the lower fragment forwards, the opposite in every particular of what usually occurs, I am acquainted with but one illustrative specimen, and that is contained in the museum of Westminster Hospital. The fragment is displaced forwards and outwards, and is penetrated by the proximal part of the bone in the direction of the deviation. The authors who have mentioned this extremely rare form of displacement, have accounted for it by supposing a fall on the back of the hand. Disbelieving that the fracture can so be caused, an explanation is called for nevertheless, and this is given by Lecomte, who supposes that the ordinary displacement of the ordinary fracture first occurs, and is then changed in position completely, through the action of a consecutive dorsal pressure, operating when the hand is turned on its dorsal surface by continued forward movement of the body.

* Societe Anatomique, 1851, p. 269.

Digitized by Google

There has always been some disagreement over the question of the exact significance of the outward deviation of the hand, and the subject is all the more worthy of study, since provision must be made for the position of the hand in every proposed scheme of treatment. At first this outward inclination was looked on as a permanent abduction, as if the hand had simply been turned outwards, and fixed there in some unknown manner. Next, after the true doctrine of the fragmentary displacement became known, this idea was seen to be untenable, and the celebrated theory of the "movement of totality," received general acknowledgment. Briefly stated, by movement in totality is meant, that the carpus follows the displacement of the distal part of the broken radius. The effect to the sight, is the appearance of considerable elevation of the hand, especially of its radial border, dependent on the shortening of the radius. To this appearance the outward look of the fragment, when it exists, adds greatly. By this motion of the hand, the ulna is made very prominent, as a matter of course, and if the shortening of the radius be extreme, four-tenths of an inch, the elevation of the hand may cause contiguity of the head of the ulna, and the heads of the metacarpal bones. Lecomte does not believe in movement in totality; he has seen three specimens in which the encroachment on the outer border of the scaphoid by the radius, and the abandonment of a part of the articular surface of the semi-lunar bone were so like physiological abduction, that he has become a convert to the old theory. I am not prepared to deny that the attachments of the radius to the carpus are so solid and inextensible as to be incapable of permitting any sliding motion at the articulation; but the examination of many specimens shows that the conditions for such motion are very rare indeed; much rarer then would be any such actual change of relation as given by Lecomte. A fact mentioned first by Dupuytren, and which Malgaigne saw but once, was comminution of the lower fragment. This, if it exists, is a pathological appearance of vital importance as regards prognosis, for it may well be doubted whether such a fracture can ever be succeeded by complete restoration of function. Some observers have affected to detect a degree of regularity in the irregularity of this comminution; but without preconceived notions, no one would ever see aught but a half-dozen or so fragments, all of about equal size, some of them strongly adherent to the anterior ligament. Among these broken pieces, hundreds of smaller bits less than the size of canary seed are sometimes found. Comminution is alluded to as exceptional by most writers, but this opinion is cer-

Digitized by Google

tainly a great mistake, since, so far as museum specimens go, it is one of the most common features, and as such it should have special emphasis. Each one of the four recent specimens found by me in the dead-house of Bellevue Hospital, and with one or two exceptions, the dozen or so pieces in the museum of the New York Hospital, exhibited it to a notable extent. In this feature will be found the reconciliation of the views of the partisans and opponents of impaction. Though the carpal fragments be thus broken up, the ordinary displacement backwards and outwards is often very evident from the direction of the fragments taken as a whole. The cause of the comminution may be detected with half an eye, from the appearance of the wedge of the shaft of the bone as it penetrates into and is surrounded by the numerous broken bits. Hence, this is the impaction of recent specimens. This impaction is not firm, and if the future appearance be not predicted from the early state, all significance is lost, and a specimen looked at for the first time, seems to contradict Voillemier's theory. After the lapse of time, however, when all particles of bone are fused together, when callus is poured out from the interior, and likewise from the thick and dense periosteum on the posterior surface of the radius, then is the appearance exactly that given by Voillemier. That writer failed to tell the whole story in thus describing old cases only, he having had no opportunity of seeing the recent. This doctrine is as certain as anything can be, short of absolute demonstration. It is impossible to see a Colles' fracture comminuted when first received, and to watch its progress until it wears the look of Voillemier's sections; but so far as legitimate deduction from both old and recent examples is worthy of acceptance, so far does a probability approach certainty. The periosteum is often torn from the bone for a considerable distance above the seat of fracture, and as that membrane throws out callus around the compact posterior wall of the shaft, there comes the subsequent appearance of a much longer line of penetration than is warranted by the extent to which the radius is shortened. Of course it is sheer impossibility to cause such union of the numerous portions of the lower fragment as will restore the primitive form of the bone, whilst the yielding nature of the divided articular end negatives attempts to replace the backward inclination. Hence, the not uncommon appearance, or rather an appearance existing in more than half the united specimens, of a carpal extremity which bears no semblance to the natural look of the part. Such results ought

Digitized by Google

not to be so frequent, nor so bad as they are, but it is well to understand that in some instances they are not to be prevented by treatment. The objection has been raised that comminution happened only when the fall was from so great a height, or when the impulse was so violent, that the resulting deformity lost all title to the name of "silver fork." I am able to speak of but one case bearing on this subject. A young man was brought to Bellevue, whose jaw and radius had been broken by a fall from a ladder. The fall was from a height of but a few feet from the ground, and, so far as the radial deformity and contusions of the soft parts were indications of value, the fracture would not have been supposed to be the result of exceptional violence. On the ulna side things were different. The head of the bone was much out of place, and appeared on the point of penetrating the skin. Great care was taken to avert this catastrophe, but the restlessness of *delirium tremens* precipitated the unwelcome accident. This complication of compound ulna luxation with Colles' fracture is a most-severe injury, not unfrequently terminating in death, of which A. Cooper, Malgaigne and others give examples. Spite of the greatest care, the joint, in the present instance, went on from bad to worse, till I was obliged to resect the head of the ulna, together with the scaphoid and semilunar bones. In the manœuvres, the lower fragment of the radius was unexpectedly found splintered, and was removed. So in this case, at least, the most-severely complicated conditions resulted from a comparatively-slight degree of violence.

There are numerous varieties of form in the fractured surfaces, of which one of the most common is concavity of the carpal and convexity of the proximal; but this is not a monograph, and we are unwilling to attempt that which would require a volume for adequate description. Hence, without a hint of the dimensions of this part of the subject, let us at once pass to the indications for *treatment*, and their fulfillment.

After trial of many modifications of Cline's treatment, I have settled on the apparatus recommended by Dr. Van Buren in a published clinical lecture. It is not maintained that there is no better treatment. Gentlemen of experience, whose opinions are worthy of all respect, have their favorites, and get good results therewith. Nevertheless, it seems that most of these unusual forms of apparatus are devised on most erroneous principles.

The reason for making choice of the "short-splint" apparatus, as it is called, lies in the fact of its theoretically-exact adaptation to the

Digitized by Google

indications, and in the brilliant results of its application. Something more than whim has dictated its selection, and, for that reason, I feel indisposed to give any new invention a trial. This is not from prejudice, but from a consideration of the circumstances attending the birth of these new candidates for favor. Generally speaking, they are the inventions of men in no respect qualified for their self-imposed task, and they but serve to satisfy the longing which some have to attach their names to new apparatus.

Concerning reduction, there is little new to say. To private patients chloroform is given for the pain alone, and if administered to hospital patients it is for the same reason, inasmuch as muscular action is no obstacle to reduction in this fracture.

The surgeon requires no assistant. He grasps the patient's hand, after the manner of shaking hands, with one of his own. Then with his other hand he encircles the forearm in such a manner that fingers and thumb respectively press on the bony deformities anteriorly and posteriorly. Extension is made in the line of the axis of the radius, while the fingers press on the hard swellings until, by a little empirical manipulation, the hand and forearm are made to look as nearly like their counterparts as possible.

Too little stress has been laid on reduction. Some authors—Larrey, Robert, Nélaton—have taken the responsibility of recommending, in many cases, a *laissez-faire* system of abandoning all attempts thereat, trusting to the continued pressure of pads. This plan is now recognized as the fruitful source of the melancholy termination of the accident in a hand and wrist deformed and incapable of respectably performing their physiological functions. But whilst strongly advocating judicious and well-considered attempts to be made at restoring the normal configuration of parts, as soon as the injury is seen, no language is too strong to condemn the senseless tugging at a part already fearfully bruised, and the long-continued turning and twisting of ligament and bone till remnants of ligaments are completely torn, the fracture is rendered incapable of retention by any apparatus, and a destructive arthritis not unfrequently set up. There are facts of general experience that easy reduction is the rule, that force is seldom requisite, and that the manœuvres must be undertaken in the slowest and most deliberate fashion. But there are cases, and every one who has to deal with this fracture will meet with them, in which traction with great force is powerless in effect. In such it is the part of safe and good surgery to stop at once, to apply a temporary retentive apparatus, with pads for gentle and continued pressure on the projections

Digitized by Google

before and behind, to lay cloths dipped in evaporating lotions on the parts, to keep the arm and hand absolutely at rest, and then, in two or three days, when the swelling is gone down, may cautious trial at improving the appearance of things be undertaken. These "secondary reductions" are seldom or never successful unless repeated again and again until consolidation. From this class of cases it is but a step to those in which the best directed efforts are of almost no avail. Still, I have yet to see the case in which some amelioration of the deformity can not be effected, and there is no charity for a man who permits a case of Colles' fracture, no matter what its nature may be, to leave his hands in the state of deformity first existing. So there are always cases that defy the best efforts, and when any treatment is claimed to be uniformly and perfectly successful, its inventor's veracity or experience are questionable. All, then, that can conscientiously be said of a plan of cure is, that to the majority of cases perfect results, absolutely perfect, are assured; and the minimum of deformity, with its accompanying impairment of function, to the minority.

The apparatus recommended, differs little from that applied by Dr. Van Buren. An anterior splint of a width throughout its length equal to the widest part of the forearm, descends to and in front of, but no farther than the anterior bony projection; on this it presses through the intervention of a pad. A posterior splint, of width equal to the anterior, goes as far as the metacarpo-phalangeal junction, and at the site of the posterior-osseous elevation there is attached to this splint a pad, firm enough to replace the finger in maintaining the lower fragment pressed forwards. The pad is wedge-shaped, its base looking upwards, the shape being to accommodate the irregularities of the surface at this situation, and its size varying according to the size of the forearm. Usually it should be one inch in the length of the edges of each of its surfaces. The pad is to be made of folded cloth; or peferably, the pad may be dispensed with, and instead the splints inclosed in a sac, which lattter can be stuffed to fit the irregularities of the forearm. The wedge-shape is not always required, but is the form which is generally best adapted to convey the pressure equably from the splint to the bone. The splints are to be confined to the forearm by two adhesive strips three or four feet long and one and a half inches wide, whilst all objections as to slipping are met by a device first introduced, it is believed, by Dr. Gouley. This procedure consists in taking a half turn with the strips across the

Digitized by Google

naked forearm before wrapping them around the splints. The latter are carefully applied with the forearm firmly extended—held in the halfway position, between pronation and supination. This latter direction must be borne in mind, as it is a fact which receives various interpretations, that when it is pronated in treatment the forearm is almost certain, after union of the bone, to lose supination beyond the degree in which the thumb is in a line with the middle point beween the condyles of the humerus. The forearm being held as directed, and before the strips of plaster are drawn more tightly than is neccessary to maintain lightly the splints in position, the hand is bent sharply and once for all, to the ulnar side; with this movement is combined flexion of the hand, the latter being a most valuable method of acting on the lower fragment. The splints are then adjusted, and the hand, maintaining its ulnar and palmar inclination, which it does of itself, is abandoned to its own weight, after the manner of Cline. The descent of the posterior splint to the metacarpus, prevents any chance cause from disturbing the position of the hand, whilst ulnar deviation guards against the outward inclination of the lower fragment. This seems to solve the much-mooted question of the possibility of extension. There is no false or constrained position of the hand here. When the forearm is placed in a sling, it is the position which the uninjured hand will assume under the same circumstances. If the ulna suffers unusual displacement, a special pad must be made to correct it. The hand takes its support, not from one but from all the structures passing from it to the forearm, tendons, muscles, skin, fascia, the four strong ligaments of the wrist joint, etc. There has been much ado about what really constituted these points of resistance in treatment with the hand abandoned to itself, and much unnecessary sympathy expressed for the injured ligaments which were finally settled on as the victims of that duty. But even if this be true, these ligaments are immensely-powerful structures, and it is the anterior alone which is subjected to any violent strain in the original violence which produces the fracture. As a matter of fact, the insignificant weight of the hand is borne by all the tissues spoken of, so that the injurious strain which is supposed to be the result of allowing the hand to hang freely, is a pure myth. The sensations of the patient are of importance in this question. I have never heard of any one's complaining of the position; and it is impossible to conceive how pain can arise from the natural disposition of parts. No accident, that I am aware of, ever follows this

Digitized by Google

treatment. In one case, unusual swelling of the hand appeared, but this was the result of venous thrombosis, and not due to any thing in the apparatus. If such swelling should occur complete relief would be found in a finger bandage.

Do not, for the sake of early removal of the apparatus, be of necessity compelled to reapply it for reappearance of the deformity. The free state of the hand, allowing phalangeal, metacarpo-phalangeal, metacarpo-carpal, and medio-carpal articulations, to be without restraint, admits of indefinite continuance of the apparatus without the fear of subsequent trouble from the bugbear of stiffness. As for the wrist joint, it is earnestly recommended, after the first week, to remove the apparatus cautiously, at intervals of two or three days, and while the fingers act temporarily vicariously for the pads, to make gentle and deliberate passive motion. So does the apparatus unite all the essentials of success, and completely relieves the mind of all solicitude about the stiffness of joints. In lines of treatment in which the hand is confined, stiffness is sought to be obviated by early removal of the splints, but in the treatment recommended, with the hand unconfined, we have an ever present guarantee of free movement, while all chance of a return of the deformity belongs to things impossible so long as the pads do their duty. No space will be taken to describe the manner of meeting special indications. It need only be said, and the remark is of great practical value, that however unusual the case, all indications will be met and the injured part given the best possible chance of resulting respectably, if we do not hurry our reduction, but take time to study the sound wrist and forearm; and then, after having brought the maimed parts to as close correspondence with the uninjured as time and patient manipulation will admit, apply the splints so stuffed and packed as to present an accurate cast of the surface on which they are to lie. Thus will the splints supply the place of the surgeon's hands, the best of all retentive apparatuses.

Résumé of the Literature Relating to Colles' Fracture.

In what follows, it was the original intention of the writer to have given a full *résumé* of the literature of Colles' fracture, to have presented a concise though complete abstract of the articles of such authors as have contributed anything original, no matter how little to the subject, and by a strict observance of the chronological order of authorities, to have traced the history of the various theories in the pathology, treatment, etc., of the accident from the earliest down to modern times.

Digitized by Google

But the realization of this idea reached such proportions, that as so much space has already been occupied, it became possible only to notice the most-distinguished writers, and only such parts of their work as possessed paramount importance.

To any one who gives the history of this fracture but a superficial attention, the name of Pouteau is familiar as the first writer who recognizes, in the constant peculiar deformity at the inferior extremity of the forearm, the indication of a fracture of the radius. This was not a mere incidental mention; but a special memoir written on the subject stated the case in words of which these were a sample: "These fractures are most often taken for contusions, luxations incomplete, or for separation of the radius from the ulna at their junction near the wrist."* Pouteau noticed the absence of mobility, saying that this phenomenon was often wanting in fractures near joints.

It should be noted, that this author introduced the second epoch in the history of our subject, the epoch of its rescue from confusion with luxation of the wrist.

Petit—mentioned when we were treating of dislocations—spoke of fractures of the radius, but did not specially notice fracture of the radius inferiorly.† Nevertheless, several ideas of his have been appropriated by some later writers as their own. The evil results of imperfect treatment, the projection of the head of the ulna remaining after union, the explanation of longitudinal displacement by over-riding of the fragments and their deviation to the ulna, and even Voillemier's impaction—were alluded to by him before the men, whose names have been linked with these discoveries, saw the light.

Desault was said to have alluded to the confusion of fracture and dislocation. He did more. After noticing the production of fractures of the forearm by falls on the wrist, he says the symptoms are the usual deformity, crepitus and false point of motion. Then follows: "There is a circumstance, however, when a fracture near the joint of the wrist may give rise to appearances similar to a luxation of that part."‡ Desault enunciates a principle in treatment which cannot be too highly estimated in importance. It was the ancient and vicious custom to wind a bandage around the forearm, prior to any further application. Petit improved on this by partly neutralizing the effect of the preliminary bandage with antero-posterior compresses,

* Œuvres Posthumes, Tom. II, p. 241, 1783.

† Œuvres Complètes de J. L. Petit. Paris, 1844.

‡ A Treatise on Fractures and Luxations. By P. S. Desault. Edited by X. Bichat, Phil., 1817, p. 155–65.

Digitized by Google

whilst Duverney modified Petit by using in addition to the longitudinal, circular compresses next the skin, in place of a bandage. Desault reasoned that this principle could have no other effect than to increase the original displacement when the forearm was tightly constricted, whilst loose application could produce only negative results. It was evident, that whilst recognizing the fact of confusion of fracture and luxation, Desault had no idea of the importance of the subject, or of the relatively-greater frequency of fracture.

In 1814 appeared Colles' famous article. This contains almost everything with which Dupuytren is credited in France; indeed, the complete silence of French authors regarding the claims of Colles, convicts the countrymen of Dupuytren either of unfairness or of ignorance. What the great Frenchman wrote was fuller and better than the work of his predecessor, was independent of the knowledge that what was said had ever been said before, and was founded on the study of pathological specimens. Nevertheless, all the more credit redounds to Colles for his discovery of the true nature of the accident, without the advantage of seeing a pathological specimen; and although he is forestalled in a few particulars by writers before him, yet we call the fracture Colles' for a reason similar to that for which America is called America, and not Columbia.* Colles says the fracture is seated at about one and one-half inches above the articulation. This is placing it very high. The author gives as constant the immediate return of the deformity on suspending extension in reduction. The fact is exceptional, and the assertion of its constancy is to be explained in the same way as other anomalies of observation of this fracture: that it is the fortune of some men to meet with a run of cases, every one of which has some feature different from the common. "The hard swelling which appears on the back of the hand is caused by the fact that the carpal surface of the radius is directed slightly backwards, instead of looking directly forwards." The anterior swelling is supposed to be the evidence of effusion into the sheaths of the flexor tendons. The backward displacement is said to be a factor in making the ulna prominent, but separation of the bones is not effected by pressure of the radial fragments, nor facilitated by rupture of the capsular (?) ligaments. Colles' idea was not to discuss symptoms; with him the cardinal point was to lay stress on the fact of fracture in contra-distinction to

* On the fracture of the carpal extremity of the radius, by A. Colles, one of the Professors of Anatomy and Surgery in the Royal College of Surgeons, Ireland. Edinburgh Medical and Surgical Journal, April, 1814.

Digitized by Google

luxation. A bold peroration was this in Colles' time: "During the last three years I have not met with a single instance of Desault's dislocation of the inferior end of the radius, while I have had opportunity of seeing a vast number of the fractures of the lower end of the bone." Colles employed long antero-posterior splints, extending to the ends of the fingers, and keeping the hand extended. He claims recovery without the smallest defect or deformity from this treatment. It is needless to say this cannot be true, but the statement must be judged charitably, as the utterance of an enthusiast who calls perfect any notable improvement on the let-alone treatment sanctioned by a false pathology.*

Sir Astley Cooper did not detract from his great reputation in what he wrote on this subject, and had his attention been called specially to it, doubtless he would have done all that Dupuytren made the source of so much fame. That this supposition is probable, is shown by his describing fracture of the inferior extremity of the radius, with luxation of the ulna; by his saying that his description is taken wholly from observation of specimens, and by his noticing the similarity of the symptoms to those dislocations of the hand.† In some of his cases, Sir Astley Cooper has mentioned the cause of the lesions he has described, and this cause was a fall on the hand. But it was obvious that he had no distinct idea of the relation between a fall on the hand and fracture of the inferior extremity of the radius. Thus he speaks of fracture, with and without luxation, in a way that recognizes no connection between what are really but different degrees of the same thing. Sir Astley thought Cline's treatment of the fracture better than many, nay, all plans introduced for a score of years subsequently. Cline anticipated Goyrand's pad for direct pressure on the lower fragment, and his principle of extension with freedom of the hand is now that of the best authorities. But the real use of this extension is not, as Cline supposed, to counteract the contraction of the pronator-quadratus, neither is half-supination a good position, nor is the preliminary bandage around the forearm to be recommended.

The manner in which the best surgeons confounded together all fractures of the radius, about Malgaigne's time, may be gathered from an article in a dictionary written by Sanson, a surgeon of first-

* See also, "Lectures on the Theory and Practice of Surgery," by the late Abraham Colles, M.D., edited by J. McKay, Esq., F.R.C.S.I. Philadelphia, 1845.

† A Treatise on Dislocations and Fractures of the Joints, by Sir Astley Cooper, Bart. F.R.S. By J. D. Goodman, M.D., Philadelphia, '25.

Digitized by Google

rate reputation.* Fractures of the radius are spoken of in general without special reference to those seated at the lower extremity of the bone. It is stated that falls on the hand can cause the bone to break obliquely or transversely, either at its middle or at one of its extremities; that an external depression marks the seat of the fracture because of a deviation of the fragments to the ulna; that certain muscles displace the lower fragment backwards—the extremity of the ulna appearing prominently under the skin; that the splint function of the ulna prevents longitudinal displacement, and that in young subjects separation of the epiphysis is more probable than fracture. J. L. Cloquet writes in a similar vein.† The impossibility of longitudinal displacement is insisted on for the reason given by Sanson, and the absence of crepitation in epiphyseal separation is attributed to the hypothetical freedom of movement belonging to the lower fragment.

The somewhat extraordinary opinion is expressed that the lesion peculiar to young subjects is more frequent than either radial fractures or fractures of both bones of the forearm. Antero-posterior splints and compresses are recommended for the treatment.

Pouteau and Petit had examined and disposed of the objections to longitudinal displacement, and yet the old doctrine was reaffirmed by Cloquet and Sanson as if it had never been attacked.

Dupuytren's discoveries and views are so often alluded to before that we shall attempt no glance at them here, the more as many of them are to be found in Malgaigne.

Malgaigne's essay, published before the *Leçons Orales* of Dupuytren, is a most-ambitious attempt at ultimate analysis. It is a fact that the finely-reasoned theories of this writer are too often pure speculation on insufficient data, but to his honor be it said that, proportionately to the subsequent discovery of positive points in the pathology and treatment of Colles' fracture, did his ambition so far contain itself as ruthlessly to disown many pet children of his brain whose gestation had been long and laborious, and whose conception, judged by all the rules of thought, perfectly legitimate. Thus the nice discrimination among results of falls on *le talon* on this or on that thenar eminence, is carefully drawn in Malgaigne's essay, whilst in the treatises of '47 and '55, he omits it altogether, and speaks only of falls on the hand. Malgaigne says the radius readily fractures inferiorly because of the spongy nature and natural

* Dict. de Med. et de Chir. Pratique. Vol. VIII, p. 514, Paris, '32.

† Dictionnaire de Medecine. Vol. IX, p. 447, Paris, '24.

Digitized by Google

curve of the bone in that situation. In young subjects separation of the epiphysis occurs more readily than fracture. The easily-produced partial luxation of the ulna explains why that bone does not break too.

Without following the long-drawn anatomical and physiological discussion which succeeds, the conclusions of which have since been shown mostly to be erroneous, it is enough to say, that Malgaigne excludes some of the movements usually ascribed to the radio-carpal joint, endeavoring to prove that flexion of the hand forwards (*sic*) and a little outwards occurs at the medio-carpal junction, whilst the proper radio-carpal movement is flexion of the hand backwards (*sic*) and a little inwards.

The treatment, says Malgaigne, should be but a permanent reduction, viz., extension, counter-extension, and pressure on the displaced lower fragment. The part muscular action was supposed to take in the deformity, induced Malgaigne to terminate his splints so high that backward flexion, as he calls it, of the hand might not be interfered with. We may say that Malgaigne wrote much, and ingeniously and originally, but to-day his work scarcely possesses historical interest, so greatly does theory predominate therein.

Goyrand's paper is representative in every respect. Appearing in 1832, the year in which Malgaigne's article saw the light, it, as its contemporary, was no mere precursor of a fullness of knowledge to be attained by successors; on the contrary, though much in it contained, now belongs to things forgotten, few subsequent productions have equalled this philosophical and brilliant essay.*

From his manner of opening the subject, we see that Goyrand believed that his readers were not informed of the true nature of the now well-known phenomena. Even the negative title of his paper is significant. Goyrand thinks the lower fragment is usually displaced from before, backwards. If muscular action alone causes the movement of the carpal fragment, the displacement is very limited; if the lower fragment overrides the upper (*chevauchement*), another cause is added to produce this displacement. The persistence of the original violence after its action in breaking the bone, causes that extreme displacement which most simulates a luxation. The fragments are likewise drawn towards the inter-osseous space, for which muscular action and the original violence are accountable. In this way the forearm is diminished in its transverse diameter. The mechanism

* Memoire sur les fractures de l'extremite inferieure du radius, qui simulent les luxations du poignet par le Docteur Goyrand, Chir. en Chef., Interne de l'Hôtel Dieu d'Aix. Gazette Medicale, 1832, p. 664.

Digitized by Google

is this. As the lower fragment is attached to the ulna, any force acting upwards will make that portion of bone describe the arc of a circle of which the triangular fibro-cartilage is the radius. The pronator quadratus likewise acts on both fragments. In reduction, the forearm is to be flexed slightly on the arm; then extension with inclination of the hand to the ulnar border is to be made, and counter-extension being effected by assistants, the surgeon presses the fragments into place. Anterior and posterior graduated compresses, which extend down to a point one inch above the radio-carpal articulation, being applied, pieces of stout cloth several times folded are then placed over the palmar and dorsal surfaces of the radius below the compresses. The compresses are to force the muscles into the inter-osseous space for the purpose of correcting the tendency of the broken radius towards the ulna. The pads below the compresses are to act directly on the lower fragment and retain it in place. The anterior pad is one inch in length and extends to the transverse projection separating the forearm from the hand, whilst the posterior descends to the metacarpus. The pads being secured by a bandage, two splints, the lower borders of which extend to the terminations of the pads, are carefully adjusted. Thus is the inclination of the hand to the ulna not disturbed. In cases of great deformity, Dupuytren's *attelle-cubitale* is directed to be added.

The year 1837 was marked by the appearance of another great classical monograph, a composition containing some new and valuable contributions to treatment. Indeed, Diday utilizes this original part of his work as an excuse for adding to the already-voluminous literature of the subject.* First, let us note that he speaks of the cause of the fracture as a fall on the wrist, rather than on the palm or back of the hand. The limits of the wrist are undefined, neither can it be said strictly that the accident follows a fall on that articulation; hence the term must be considered unfortunate. He follows Goyrand's exposition of the direction of the fracture, but thinks that author has too little insisted on the mechanism. This he proceeds to discuss, introducing the somewhat celebrated application of the mathematical parallelogram of forces. The forearm being carried obliquely forwards, the force producing the fracture can be resolved into two components—one parallel to the ground, the other perpendicular thereto. The latter is the only acting force, and it finds the radius oblique to the plane to which the

* Archives Generales de Medecine, 1837, Tom. XIII, p. 141. Memoire sur les fractures de l'extremite inferieure du radius, par M. Diday.

Digitized by Google

force itself is perpendicular; hence "it is clear that the solution of continuity coming as in all fractures by *contre-coup*, to take the same direction as that of the force which determines it, will run here in a line oblique from below and in front, in relation to the radius considered in the position which it occupies on a subject in a standing position." Diday adds, that falls on the back of the hand produce a fracture with direction the reverse of that usually seen. The displacement acknowledges both muscular action and persistence of the original violence as etiological factors, and Diday contends that the obliquity permits these factors' action in a direction upwards and backwards. The backward displacement is generally admitted, but the upward has engaged little attention. When the fibula is fractured, the inconsiderable amount of shortening is dependent on a change in the direction of the fragments, and in no sense on their shortening by overriding—a circumstance evident enough from the function of the tibia as a splint, which prevents any upward movement of the foot calculated to cause an overlapping of the broken surfaces of the fibula. In the radius, no corresponding arrangement exists to prevent the hand from being pushed upwards in the movement carrying the lower fragment, and a variable amount of overriding (*chevauchement*) is the constant appearance. From this explanation Diday says it is plain enough that, in restoring the normal direction of a fractured fibula, we likewise restore its normal length, whilst the like result is very far from attending a similar manœuvre in the case of the radius. Shortening being established, the normal relations of the radio-ulnar articulation are consequently invaded. The superior half of the articular facet of the radius no longer corresponds to the ulnar head, nor partakes of the movements of pronation and supination. In the treatment, Diday deserves all honor for distinctly enunciating and insisting on the necessity of extension of the hand; and M. Godin, who lent our author some specimens from the Hospital Necker, constructed a splint on that principle, which apparatus was attended with some success. This treatment in Diday's hands was unfortunately followed by so much pain, that he was forced to abandon it. His own apparatus consists essentially of an anterior splint descending to one-half inch above the radio-carpal articulation.

Of the so-called Barton's fracture, criticism cannot speak kindly. It does not appear that anything but pure reason suggested the breaking off of a portion of the posterior articular lip of the lower extremity of the radius, as the *rationale* of a certain train of symptoms, to Dr.

Digitized by Google

Barton's mind. In his article it will be seen that he sets forth the signs of Colles' fracture as plainly as such signs have ever been given, and then, with professed unconsciousness of an important and abundant literature, of the fact that before him there had ever been an attempt to account for these well-known appearances, he gave the explanation which seems good to him. There was no indication that he who gave it its name ever saw a specimen of Barton's fracture. It is true that since his time certain rare instances of fractures of the posterior lip of the articular surface of the lower extremity of the radius have occurred, and that specimens thereof may be seen to-day, but it it is certainly no merit in Dr. Barton to imagine this peculiar fracture as the cause of the symptoms of Colles' fracture. Dupuytren and Colles would be surprised if their shades could know that to-day the subject at which they labored so hard had so been treated by a surgeon of reputation. Dr. Barton was fortunate in his hypothesis. Had fracture of the radial articular lip never been seen subsequently, there would have been wonder that so distinguished a man could have credited to an imaginary lesion, a characteristic train of symptoms which his famous predecessors demonstrated to belong to an every-day accident.*

After Dupuytren, Voillemier is by far the most celebrated of that corps of experienced observers this little fracture marshals. Appearing at a time when Dupuytren's ideas had been developed and added to, when it was supposed that acute and logical minds had exhausted every phase of the subject, when it was naturally imagined that any subsequent treatise would necessarily be but a warmed-over dish of previously-served delicacies, this admirable monograph startled its readers with a wholly novel and original explanation of the deformity. But Voillemier's views have other claims than those of novelty and originalty—they are highly seasoned with truth. Shortly after their appearance, Robert Smith made a determined but unsuccessful attack upon them, and his opposition having disseminated them still more widely, in a modified form they have been embraced by many English writers.† Voillemier gives this explanation of the mechanism of production, not very new, as will be seen, but remarkable in its admission of falls on the dorsum of the hand in the etiology. The shock which is received by the heads of the metacarpal bones is transmitted directly to the radius, and no difference is seen whether the fall be on the palm or dorsum. There is direct transmission in

* Dr. Rhea Barton, Philadelphia Medical Examiner, 1838.

† Memoire sur les fractures de l'extremite inferieure du radius, par M. Voillemier, D.M.P., Archives Generales de Medicine, Mars, 1842.

Digitized by Google

falls both on the palm and back of the hand, with the addition, in the latter, of progressive enfeeblement of the force in following the curves and articulations of the wrist. From this it follows that greater power is required to break the radius in falls on the back than on the palm of the hand. This is pure theory. Our author professed to have seen cases produced in the exceptional way, with all the ordinary characteristics of the injury. The conclusion is drawn that attempts, such as Goyrand's, to establish certain lines of solution of continuity as bearing a direct relation to the manner of falling, take no account of the many complex circumstances involved, and that such attempts must result in disastrous failure.

As to displacement by movement of the lower fragment, Voillemier holds that the normal double inclination of the radial articular surface from above downwards and within outwards, is changed to below upwards and within outwards. The inferior extremity of the radius is composed in great part of cancellous tissue, but surrounding this is a lamina of compact substance, as thin as a sheet of paper below, but increasing gradually in thickness above. The wall of compact bone descends somewhat lower in front than behind.

In falls on the palm, Voillemier says, as the shock is directly transmitted, the radius fractures where it is weakest. At this point the lower fragment forms with the rest of the bone a retreating angle, and it is here that the solid wall of compact tissue penetrates the spongy substance. *Pénétration d'emblée* occurs, when the lower extremity is as voluminous as that generally seen, when there is direct transmission, and when the whole circumference of the bony wall yields at about the same time. In such specimens the penetration is generally several inches deep. Comminution is produced if, under the stimulus of a slightly-augmented force, the superior fragment continues its wedge-like action on the inferior to the point of splitting. The fact that in some cases the line of penetration is not a correct measure of the extent of the impaction of the fragments, the compact wall appearing too long, is explained by supposing that filling up of the depression at the seat of fracture, through the medium of the periosteum, takes place. Voillemier next enters into a somewhat-extended discussion of the part that forced extension of the wrist plays in the etiology of these fractures, and from his language it is evident that in a classification of authors his place is among the partisans of the mixed theory. It was significant that Voillemier never had opportunity of seeing a recent specimen. All his specimens were old, and union in them had long been perfected. By a wholly-new

Digitized by Google

method of investigation in this fracture, that of making sections with a saw, a line of compact tissue was in all cases found penetrating the spongy. This line below, stopped at different distances from the articulation in different specimens; but above, it was in all cases continuous with the compact tissue of the wall, which latter exhibited a notable increase in thickness at the point where the line was received.

In 1842, Huguier read a memoir on the fracture of the inferior extremity of the radius, wherein he took occasion to present a new apparatus.* The memoir is neither brilliant nor original, and its matter grew from the apparatus, not the apparatus from the matter. What he recommended was an application of Cline's principle of permanent extension; but, like all complicated adaptations of this principle, it is now never heard of, whilst the simple weight of the hand is utilized in many plans of treatment.

Huguier uses two splints, anterior and posterior, which extend beyond the fingers and are there united. Around the carpus there is a sort of collar from which, before and behind, four tapes extend to the extremities of the splints beyond the fingers. These tapes are drawn tightly, so as to make extension on the hand, and are then tied to the splints. That the splints may furnish adequate counter-extension, the cone-like shape of the forearm is utilized by applying compresses to its anterior and posterior surfaces, and the splints resting on these are transversely indented to prevent slipping. If the forearm be so thin that no muscular swell exists for a point of support above, then a posterior splint is bound on the arm against which those attached to the forearm abut.

This is certainly ingenious, but there is no provision for the displacement of the lower fragment; indeed, Huguier stigmatizes Goyrand's provision for the correction of that displacement, as useless, and a grave sin of commission is the absolute rest to which phalangeal, metacarpo-phalangeal, metacarpo-carpal, radio-carpal, radio-ulnar and elbow joints are condemned.

Nélaton does not affect originality; his essay is chiefly critical.† Though an ardent partisan of Voillemier, he exhibits such shrewd judgment of the quality of the works of others as to absolve himself from the imputation of embracing new ideas because of their newness alone. Most of his predecessors had gone into print to correct this or that point, over which other writers were supposed to have blundered, or to give safe delivery before admiring friends,

* Seance du 1er. Mars, 1842. de l'Academie de Medecine.

† Elemens de Pathologie Chirurgicale, par A. Nelaton. Tom. I, Paris, 1844.

Digitized by Google

to a pet conception with which they were big. Nélaton's chapter on this fracture is of elegant diction and exhibits scholarly, minute acquaintance with others' work; but it is but a part, a chapter of a general treatise, and as such concerns itself solely with the status of the subject in the author's time. But Nélaton was not a mere sayer of other men's thoughts; the pistol-shaped splint is figured in most surgical text-books, and its invention was almost equivalent to its general adoption. Nor is this all; an enthusiastic believer in the previously-enunciated theory of the occurrence of the fracture by forcible extension of the hand, he is the author of the ingenious comparison of the first row of carpal bones, when in the position given them by extension of the hand, to an arch, of which the abutments are the pisiform internally, the scaphoid and trapezium externally. In addition, the os-magnum and unciform are supposed to furnish a middle support.

Prof. Fenger, of Copenhagen, has been wrongly credited with some very great improvements in treating this fracture. What he did was, to advocate the extraordinary and unwarrantable practice of keeping the patient in bed during treatment—as well keep a man in bed for a cut finger.* Beside the excellent advice to flex the hand in reduction, and to leave the member unconfined by bandages, is placed the reservation for exceptional instances of the important pressing forward of the lower fragment. The forearm is then to be laid on an inclined plane over which the hand is pendent. As previously said, bed is an essential component of the treatment. Busk completely pronates the hand, and leaves the fingers only free; otherwise his apparatus is like Fenger's. He could not think the extensor tendons act as a natural splint, which Fenger claimed, especially when the hand hangs over the splint. Mr. Shaw endorsed Fenger's treatment, saying that Velpeau cured (*sic*) only thirty out of fifty, whilst Fenger failed in but one case. This may simply mean that Velpeau was more conscientious than Fenger, as, in the year 1842, the former expressed his belief that all apparatus in use before that time was worse than useless. But so strange are the ways of men, it was after saying this that Velpeau hit on the plan of incorporating splints and compresses with dextrine, which, keeping the fingers immovable, was certainly the worst apparatus it ever entered any one's mind to conceive.† A

* On Fractures of the Lower Extremity of the Radius, by Prof. Fenger, of Copenhagen. Translated from the Danish, by H. M. Shaw, Esq., and communicated by Dr. Hodgkin. Read to the Royal Medical and Chirurgical Society, April 27, '47. London Lancet, May 8, '47, p. 487.

† Gazette des Hopiteaux, Jan. 13, 1842. p. 538.

Digitized by Google

few years sufficed to shake the confidence of its author in the brilliant results obtained from the dextrine, for, in a report of his service at La Charité, he is said to have vituperated all bandages, and to have gone the lengths of trying Fenger's Danish treatment, but with most discouraging results.*

The separate 1847 and 1855 editions of Malgaigne's great work are, in the chapters devoted to luxations and fractures about the wrist, the fruition of the series of that author's essays in the Gazette Médicale. At the present time, there is no authority more often quoted, no dictum more readily accepted, than these same books of seventeen and twenty-five years ago.†

Malgaigne's discussion of treatment is eminently practical, and calculated to inspire any one who reads with the necessity of a thorough appreciation of the deformity before he can treat a case intelligently. Reduction is to be effected by extension and counter extension, while the lower fragment is being pressed forwards by the fingers. He formulates three indications—re-establishment of the inter-osseous space, correction of the turning back of the carpal extremity of the radius, and prevention of the abduction of the hand —as the ends to which all devised means of treatment have been adapted. The first is passed as an imaginary necessity, the second is met by the posterior compress or pad, and the third, either by arrangements in which the hand hanging freely acts as a force of extension or by devices in which the hand being bound is held in adduction, as by the *attelle-cubitale.*

Now, as it is seen that frequently the styloid process of the radius looks outwards, and that the ulna is displaced forwards. two new indications exist, for which none of the above-mentioned principles of treatment provides.

Malgaigne's apparatus consists of antero-posterior splints and compresses which stop at the wrist, and are so designed as to exert a maximum of pressure on the carpal fragment and a minimum of interference with the motions of the wrist. To answer his two new indications, Malgaigne recommends lateral splints, of the same length as the antero-posterior, which act, one on the inner border of the ulna, the other on the outer border of the styloid process of the radius. Pressure is distributed by pads, as in the antero-posterior splints. The hand is to be left free, after the manner of Cline.

Skey's contribution to our subject is scarcely up to the spirit of the

* Boston Medical and Surgical Journal, Oct. 7, 1846. Reported by Fisher.

† Traite des Fractures et des Luxations, par J. F. Malgaigne. Paris, 1847 and 1855.

Digitized by Google

contemporary publications thereon, still, place for him is warranted by the few words in which he gives the differential diagnosis of fractures of the radius inferiorly from radio-carpal luxation, the nature of his remarks being such as to make one believe he had really seen the rarer injury. "One important sign distinguishing fractures from dislocations, is its liability to displacement after reduction. I have seen examples of injury at the wrist joint in which this evidence was conclusive in favor of dislocation, and I cannot but distrust the opinion of Dupuytren expressed in such strong and unequivocal terms."*

The position of the styloid process, which in fracture is driven upwards and backwards, and in dislocation retains its normal relation to the shaft of the bone, is likewise said to be a valuable indication.

Richardson's treatment, figured in a late heterogeneous article, is substantially that recommended by Malgaigne, what difference there is being unfavorable to the Dublin surgeon.†

Prof. Gordon, of Belfast, is said by Porter, to have been of the opinion—a very unfortunate opinion for his reputation—"that the fractured extremities of both fragments were displaced forwards and inwards."‡

The animus of Porter's article, is a new apparatus of course; and its pretensions are certainly very modest, four weeks being necessary to consolidate the fracture, and four months to perfect union under this improved treatment. The peculiarity consists in Dupuytren's *attelle-cubitale* applied to the radius. This is the principle, but instead of a strip of iron, a piece of wood attached to the anterior splint overlaps the radius, and a beveling of the wood immediately under the seat of fracture is received into the concavity of the lower part of the bone.

Gordon's splint is, or rather was, not an unpopular article. It was extensively used in Ireland, and found favor in some of the London hospitals. Locality has preserved us from its adoption hitherto, and its future importation is to be deprecated.

In the course of reading for the preparation of this paper, I have often been struck by the appearance of a foot note, almost constant in the works of later British writers on our subject, which, slightly varied in phraseology in each, set forth their author's gratification at finding Dr. Robert Smith's discussion the best that has been written on the fracture. This judgment by the class mentioned is very

* Operative Surgery, by Frederic Skey, F.R.S. Phil., 1851, p. 161.

† Dublin Quarterly Journal, 1871.

‡ Dublin Quarterly Journal, 1857.

Digitized by Google

natural. Robert Smith was a Dublin man; he was an authority second to none on fractures in general, and what he had written on Colles' fracture in particular would be acknowledged, even by the biased, as of great merit and most original. Thus did nationality and merit occasion such tribute, even to the greater, though seemingly less individual honor of an indorsement of the labors of one by a community. Hence, crept into insular and American books the term "Irish fracture." Spite of this generous and deserved indorsement, Dr. Smith is unfortunate enough to have his convictions grounded on what must be considered untenable ground, and no one, whose opinion is worth the asking, now calls himself a believer in Smith's unmodified theory. It takes but half an eye to see that Smith's stimulus to write is the monograph of Voillemier, then several years old.*

Since Voillemier, all the world believed in impaction, in firm union of the fragments from the first. With the enthusiasm of a man animated by a mission, Smith set himself to break this bond; and, having gone back to time before Dupuytren, sought to re-establish pure uncomplicated muscular action as the cause of the deformity. Since there were not neglected opportunities for studying specimens which should have taught him different conclusions, there was the possibility that if penetration had not tempted attack, Dr. Smith might have championed a different theory than muscular action.

Smith's criticism of Voillemier first attacks the deduction of the appearances of recent fractures from specimens many months old. In disproof of impaction a number of specimens are described, and the following conclusion is drawn: If impaction were a reality, then the distance between the line of compact tissue which was supposed to have penetrated, and the posterior wall of the lower fragment, should always be the measure of backward displacement. There is no such correspondence. Further, if impaction be true, the radius must be much shorter than it is found in this fracture, as backward displacement is a second factor tending to diminish the length of the bone. On the same supposition, the penetration should nearly correspond to the shortening; whereas, one is sometimes greater than the other, and at other times less. Lastly, the penetrating line is frequently longer than the distance of the fracture above the joint, and the disputed theory is held to be impossible as a fact, at least if the ulna and ligaments remain intact.

* A Treatise on Fractures in the Vicinity of Joints, and on Accidental and Congenital Dislocations. By Robert N. Smith, M.D., M.R.I.A., Dublin, 1847.

Digitized by Google

Lecomte's articles are conceived in a justly critical spirit, and if his conclusions are not infallible, they are well considered and carefully drawn.

Of the three theories which have been used to explain the mechanism of the production of these fractures, the theory of muscular action, the theory of direct transmission of shock, and the theory of *arrachement* by forced extension of the wrist, the author gives his adherence to the latter, and his reasons are presented in five propositions.

Proposition *a*.—The only real cause of these fractures is a fall on the palm of the hand;* hence, the subject will be greatly simplified if such expressions as, falls on the *talon*, on the back of the hand, on the wrist, on the anterior or dorsal face of the wrist, be rejected.

Lecomte finds, in addition to the above reason, ample justification for his *rôle* of iconoclast in the vague nature of the terms *talon* and wrist, and as for falls on the dorsum, they are so rare as to merit no attention.

Proposition *b*.—The radius cannot be considered as compressed between the ground below and the weight of the body above, inasmuch as the point receiving the shock is more or less in advance of the long axis of the radius.

If these fractures occur from direct transmission of shock, we must assume that the carpal extremity receives the full impulse, and the force is then conducted to the superior extremity of the bone. But, says our author, not only does this assumption abitrarily exclude the ulna, but counts as nothing the position of the olecranon in the humeral fossa,—an arrangement in every way calculated to transmit a shock to the humerus. Why, then, delegate that function to the comparatively-inefficient superior articulation of the radius? Then follows the experiment by which it is sought to prove that the parts beyond the wrist do not touch the ground at all. Lecomte thinks it is the thenar and hypothenar eminences, the posterior part of the metacarpus, and the second range of the carpus which sustain the shock.

Proposition *c*.—These fractures are always the result of a forced extension of the hand, the radius becoming perpendicular to the forearm, or the forearm making an angle of 90° with the hand.

From the above it is evident that when the forearm is directed perpendicularly to the ground, fracture immediately occurs, as in

* Recherches Nouvelles sur les Fractures Indirectes de l'Extremite Inferieure du Radius. Archives Generales de Medecine, Dec. 1860, V. serie. Tom. 16, p. 641.

Digitized by Google

that case the hand is in forced extension. If the forearm be directed obliquely, it is necessary that forced extension supervene, either from the impulse which causes the body still to move forward, or from the arrest of the hand by any object, before it is possible for the fracture to occur.

Proposition *d*.—Forced extension acting alone, is capable of causing this fracture by "*arrachement*."

The numerous experiments made by Lecomte and others placed this proposition beyond doubt.

Proposition *e*.—If in forced extension the anterior radio-carpal ligament suffers violent distension, this ligament sustains in addition the whole weight of the body in falls on the palm.

It is obvious that great extension of the hand must cause violent distension of the ligament. As for the other force—the weight of the body—received superiorly by the ulna, it is transmitted inferiorly by the soft parts to the radius. The latter presses on the arch formed by the first row of the carpus, which bones, having no point of support from the ground, rest their burden on the already-overtaxed ligament. Now this anterior ligament has extensive and powerful insertions into the lower anterior concave surface of the radius, and being subjected to two such great forces, the result is to tear off (*arracher*) the radial extremity.

Third Paper.*—Lecomte embraces all varieties of the fracture under the three heads of partial *arrachement*, total *arrachement*, and *arrachement* with crushing or comminution of the lower fragment.

The first is frequent, comprising separation of the styloid epiphysis, and detachment of a fragment from the anterior or posterior surfaces of the radius. The second is the fracture generally seen, and includes several varieties.

The old division into oblique and transverse lines of solution of continuity, is said to be insufficient, inasmuch as no account is there taken of the far-more-important appearances presented by the surfaces of the fragments. As for penetration, Voillemier's explanation proceeds on the doctrine of direct transmission of shock, which is inadmissible. After experiment and observation, Lecomte speaks of a fracture consisting of a concave carpal fragment, and a corresponding convex superior fragment. This he thinks corresponds to Voillemier's *pénétration d'emblée*. But, in reality, penetration plays but a feeble *rôle* in the production. This fracture may be produced by comparatively-feeble percussion on a resected humerus, to which bone the

* Same Jour. Ve. serie, Tom. 17, 1861, p. 180.

Digitized by Google

forearm is attached, the hand's palmar surface resting on a table. In this way, the original effect of the impulsion is supposed to be obtained, without addition of the reciprocal pressure of the fragments. Both forces can be made to act by a smarter blow on the exposed humerus.

If penetration exists at all, it is seen posteriorly in the direction of movement of the carpal fragment. If there be no penetration, there is crushing, and the crushing is in the same situation as the penetration.

Mr. Callender's article deserves more space than we can give. There is not a sentence in it but which is dictated by clinical and pathological observation. From seeing many of his specimens, I can testify to the accuracy of his descriptions.

The paper opens with the statement that in fractures involving joints, and especially those involving the carpal extremity of the radius, unsatisfactory results are often independent of the treatment.

Of the thirty-six specimens in the museums connected with the London schools of medicine,* those that are united at all are joined together in slovenly fashion. "They show clearly enough that the cause of each deformity is the impaction of the proximal into the distal portion of the bone." This is contrary to Lecomte's opinion. The cancellous tissue which forms the extremity of the radius has no arrangement of its bone plates calculated to resist a force acting in the direction of the long axis of the bone. The surrounding thin lamina of compact bone becomes measurable on the posterior surface eight-tenths of an inch above the carpal surface, thickness increasing thus with height. In falls on the hand, "the weak cancellous tissue is broken across, and the wedge-like end of the compact wall is driven into the distal portion of the bone, not always in the same direction, and is there firmly impacted."

After detailing specimens at length, Mr. Callender then sums up the doctrine he illustrates. "In a great number of cases, this impaction so fixes the fragments that they cannot be unlocked, and the deformity is permanent." Callender is of opinion that disturbance of the reciprocal relations of the radius and ulna is exceptional. But the lateral deviation of the lower fragment has been found to have influenced the position of the ulna, for in specimens with backward and outward displacement of the lower fragment, the resulting radial shortening and deviation of the carpus to the side of shortening have caused luxation of the ulna towards the pisi-

* St. Bartholomew Hosp. Rep'ts, 1865, p. 281.

Digitized by Google

form bone. When there is complicating fracture of the ulna, the fragments are directed to the radius. The greatest amount of actual shortening of the radius is stated to be less than four-tenths of an inch. As relaxation of ligaments, shifting of the long axis of the ulnar shaft, and the thrusting out of the carpus enable the ulna to accommodate itself to this shortening, the non-disturbance of the relations of the two bones is supposed to present no difficulty.

Dr. Moore, of Rochester, has lately succeeded in attracting notice to a new method of treatment, suggested by the study of a double specimen.* The patient fell from a height, receiving injuries from which he died in a few minutes. On examination, Colles' fracture was found on both sides. In the right member, backward projection of the hand, and downward projection of the ulna marked "an extreme case of this fracture." On raising the fascia, the lower fragment was seen to ride the back of the upper one, and to be placed at right angles to its natural position. No impaction. It was attempted to push the lower fragment back in its place, but removal of pressure was immediately followed by return to the abnormal position. The explanation is, that the ulnar extensor tendon, although on the back of the hand, is situated enough on the side to furnish lateral support; also, that the annular ligament catches the tip of the styloid process of the ulna, which circumstance, as the ulna is dislocated and incapable of rising, forces the wrist (?) back. What Dr. Moore calls "the ordinary plan of reduction"—bending the hand to the ulnar side—tightened the annular band on the styloid hook, and neither direct pressure on the ulna nor extension of the hand effected liberation. The internal lateral ligament had torn off a portion of the styloid process of the ulna, and had left that part of the bone rough, and more apt to catch. The triangular ligament was also ruptured. On the left side the conditions were *virtually the same* as on the right. The state of things which existed in the specimen could be produced by forced extension of the hand on the dead subject.

From these data, Dr. Moore does not hesitate to say, that the true cause of shortening and radial inclination is, in all cases, overriding of the fragments. The conclusion drawn is, that the secret of success in treating this fracture rests in the recognition of the fact that the ulnar dislocation, and not the radial fracture, must be the point of attack. Reduction is accomplished by a sort of circumduction of

* A New Treatment for Colles' Fracture of the Radius, by E. M. Moore, M.D., Professor of Surgery, Buffalo Medical College. N. Y. Medical Record, April, 1870.

Digitized by Google

the hand to disengage the rough-pointed styloid process from the annular ligament, the test of success being the presence of the ulnar-extensor tendon in its normal position on the back of the hand. To retain the ulna in position after reduction, a small roll of adhesive plaster is placed immediately under or on the palmar side of the lower extremity of the reduced ulna, this compress being retained by a strip of adhesive plaster, one inch wide, wound several times around the wrist. Dr. Moore professes to have had perfect success with this non-conservative apparatus; in fact, all difficulties in treatment have vanished since he has used it. In the first place, Dr. Moore's deductions are drawn from a single specimen. Now, if any thing about this subject has been settled, it is that there is a wide margin of variation for the appearances of different specimens falling under the title of Colles' fracture. Further, the particular case described, was caused by exceptionally severe violence; so severe, that some authorities would deny the applicability of the term "Colles' fracture" to the specimen, inasmuch as it has been found that very great force produces very inconstant results.

In describing the deformity, the overriding of the fragments—an old idea of Diday's, which has seldom been found by anybody else—is resurrected; besides, it is difficult to conceive how the lower fragment can be at right angles to, and at the same time override, the upper fragment, since the former is said to have been at right angles to its normal position, that is, nearly in a line with the shaft of the radius. Neither is the extent to which the ulna is said to have been dislocated very common, nor is the breaking off of the tip of its styloid process a constant phenomenon. Neither in accidental or in artificial fractures, complicated with dislocation of the ulna, and breaking off of the tip of the styloid process, have I found engagement of the sharp point of bone in the annular ligament, nor has this fact been mentioned by any other observer. Inasmuch as the dislocation is the only thing to be treated, to be logical, Dr. Moore must accept the policy of doing nothing when the fracture is unaccompanied by dislocation. Dr. Gouley had the courage to put in practice Dr. Moore's treatment, but recognition of the "test" tendon was found impossible from the swelling; whilst, as for the adhesive strip, when loose, nothing but pain prevented free movement of the joints; when tight, nothing but removal prevented swelling of the hand, and sloughing of the skin.

Digitized by Google

ARTICLE IV.

A case of anchylosis of the right temporo-maxillary articulation, successfully treated by excision of the condyle, with remarks, by Dr. J. L. LITTLE, of New York, Surgeon to St. Luke's Hospital.

Rose Levy, single, age 19 years, born in the United States. This patient came under my observation in the spring of 1873. The history of her case is as follows: About seven years ago several abscesses formed over the bones of the extremities, which, after opening, gave exit to small pieces of dead bone, and then healed, leaving depressed cicatrices. Five years ago an abscess formed on the side of her face, just over the right temporo-maxillary articulation, which was opened by a surgeon. Some time after, a piece of bone came away, after which the wound gradually closed, leaving a depressed cicatrix, which is still visible. During this time the motion of the articulation was considerably impaired, and this difficulty gradually increased for two years, when the lower jaw became immovable. Upon examination I found a depressed cicatrix a little in front of the right temporo-maxillary articulation. The teeth of the upper and lower jaws were in contact, and no motion whatever could be detected. The soft parts were in normal condition. The masseter and temporal muscles could be brought into a state of contraction. The patient was very much emaciated, owing to the fact that she had been unable to take solid food for over three years. Her articulation was very imperfect. She was etherized and examined as to lateral motion, but none could be detected. An attempt was then made to open the jaws by various dilators. Great difficulty was experienced in introducing any instrument between the teeth, and not until several teeth, both in the upper and lower jaws, were broken, could dilators be introduced. Mott's, Roser's and other forms of jaw dilators were used.

By using considerable force the left side of the jaw could be opened about one-quarter of an inch, but there was not the slightest yielding on the right side. This examination convinced me that I had a case of true bony anchylosis to deal with, and I recommended the patient to wait until the injury done to the gums and alveolar processes (by the attempt at forcible dilatation) had healed, and then to enter the hospital for operation.

On September 15th, 1873, she entered St. Luke's Hospital. Her

Digitized by Google

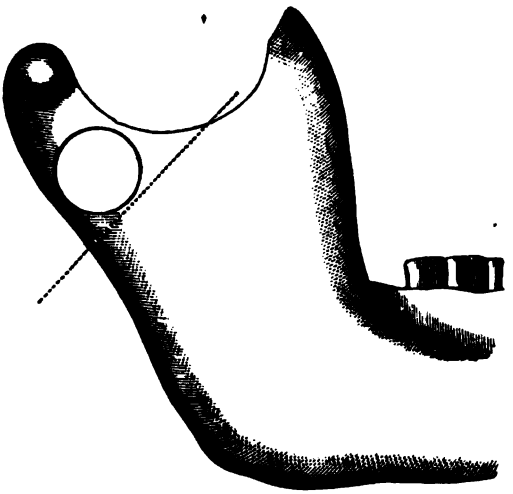
general condition at this time was greatly improved, and she had increased in flesh, having been able to introduce a considerable quantity of solid food through the opening left by the removal of the teeth at the last operation. September 30th the following operation was performed: The patient being etherized, an incision was made down to the bone, beginning a little above the angle of the jaw, and following the inferior border of the jaw to a point opposite the canine tooth. This incision divided the facial artery, the proximal end of which was secured by a ligature, the distal end by torsion. The attachment of the masseter muscle was then detached from the ramus by a blunt instrument, and the soft parts covering the bone were raised until the external surface of the ramus, the sigmoid notch and the condyle were exposed. An examination now showed that the neck of the condyle was very much enlarged, and was continuous with the temporal bone. The flap being held up by an assistant, a trephine a half inch in diameter was applied at the enlarged neck of the condyle, on a level with the deepest portion of the sigmoid notch. (Fig. 1.)

A button of bone was removed three-eighths of an inch in thickness, which was found to be very hard. The portion of bone on each side of this opening was then cut through with a chisel, and the neck of the condyle cut away, piece by piece, so as to leave no portion projecting from the temporal bone. No distinct articular surface of the condyle could be discovered. The portion of bone thus removed left a vacant space of about half an inch. Fig. 1 shows, above the dotted line, the portion removed by the trephine and chisel. After the bone was cut through on this side, the jaw was readily opened to the extent of half an inch between the teeth of the upper and lower jaws. There seemed to be no difficulty in the movements of the articulation of the opposite side, and the inability to open the mouth, even by moderate force, to a greater degree, seemed to be due to the rigidity of the soft parts on both sides of the face. I did not think it advisable to resort to forcible dilatation, at this time, for the purpose of opening the mouth to a greater extent, preferring gradual dilatation by instruments as soon after the operation as the patient could bear it. The soft parts were then brought together with interrupted sutures, and a compress of lint placed over the wound and retained by a bandage. During the operation, I was assisted by Prof. A. C. Post, consulting surgeon, and Drs. R. F. Weir and Geo. A. Peters, attending surgeons of the hospital.

The after treatment of the case was as follows:

Digitized by Google

Fig. 1.



Digitized by Google

Digitized by Google

October 1. Bandage and compress removed, and cold water dressings applied.

October 2. Considerable swelling; the most dependent part of the wound opened, by removing a few sutures, and a quantity of fluid, serum and pus, evacuated; poultice applied.

October 6. All the sutures removed; the greater portion of the wound was healed; the ligatures also came away. The face was very much swollen, and the jaws could not be opened. From this time the swelling gradually subsided, and the discharge from the open portion of the wound decreased rapidly, so that on November 1st the patient could open her mouth to the extent of half an inch, between the incisor teeth of the upper and lower jaws. She was able to open and shut her mouth with but slight pain. Excepting a slight attack of inflammation, beginning over the removed articulation and involving the parotid gland, which subsided in the course of a week, the patient rapidly recovered the use of her lower jaw, chewing her food with ease. On December 1st she left the hospital; at that time she was able to open her mouth three quarters of an inch, between the central incisors. After leaving the hospital, I advised her to use Roser's jaw dilator, shown in fig. 2. This she used two or three times a day, opening her mouth by the instrument, so as to put the soft part on the stretch to an extent that she could easily bear, for fifteen minutes at a time. When this paper was prepared, nearly four months after the operation, the patient was able to open her mouth seven-eighths of an inch, and had perfect use of the jaw. The wound gave rise to but little deformity.

REMARKS.—Immobility of the lower jaw, depending on complete bony anchylosis of the temporo-maxillary articulation, is a comparatively rare disease. Dr. G. C. Blackman, in the "American Appendix to Velpeau's Surgery," states: "There is but one specimen in the Museum of the Royal College of Surgeons of England, in which the fusion of the bones of this articulation is complete." Cases, however, are mentioned by other surgeons. Gross states that he has met with quite a number of cases of anchylosis of the temporo-maxillary articulation, several of which occurred in young subjects, resulting from injury, as a severe sprain, a concussion or arthritic inflammation, leading to a deposit of plastic matter, and the conversion of this substance into cellulo-fibrous, cartilaginous, or osseous tissue.* Cruveilhier mentions the case of "an old woman who had anchylosis of the right condyle of the lower jaw, the result of a blow received when a child."†

* Gross' Surgery, 1866, vol. 2, page 486.
† Anatomie Path. Livr. IX.

Digitized by Google

Dr. Leipold Berrut, in a thesis entitled "De la Constriction Permanente des Machoires et des Moyens d'y Remedier, Paris, 1866," in describing this variety of osseous anchylosis, states: "La réalité de cette lésion repose d'abord sur les observations de Percy, Larrey (de Toulouse), et Samuel Cooper, constatant l'ankylose de toutes les articulations en même temps que celle de l'articulation de la mâchoire inférieure avec le temporal ensuite sur les faits publiés par MM. Payan, d'Aix, et Healy, qui établissent l'existence de l'ankylose osseuse limitée à l'articulation double de la mâchoire, et enfin sur le fait présenté à la Société anatomique et reproduit par M. Cruvéilhiér, qui est le seul exemple de l'ankylosis unilateral."

Dr. Wernher, however, states "that this is the most frequent form of anchylosis of the lower jaw, and also says that examples are recorded by Sandifort, Blanden, Howship, Holcher, Hyrtl, etc." *

Christopher Heath, in his valuable work on "Injuries and Diseases of the Jaws," states that "anchylosis from this cause is less common than that due to contracted cicatrices;" and refers to a case described by a Mr. John Howship, in 1816, of scrofulous inflammation of the face, followed by anchylosis of the jaw, in a man of fifty-six years of age, who dated the origin of the disease from a cold, taken at the age of four. The original illustration shows complete bony anchylosis of the lower jaw to the temporal bone. He also states that "there is the skull of a negro in Guy's Hospital Museum, who has had disease of the cervical vertebræ, and complete osseous anchylosis of the temporo-maxillary articulation, coming from a wound in the neck by a fork." He also alludes to an operation, performed by M. Grube, in 1863, for a case of true bony anchylosis of this articulation. Anchylosis may occur, however, in other ways. Dr. Wernher states that "two cases have been reported of the coronoid process becoming attached to the zygomatic arch, and three cases in which the alveolar processes had become united."

In fifteen cases of anchylosis of the temporo-maxillary articulation, collected by Dr. Wernher, both sides of the jaw were affected in seven, and one side in eight. He also gives three cases of anchylosis due to osseous connection of the alveolæ.

Wagner gives a case of anchylosis of alveolar processes relieved by operation.†

Immobility of the jaws may depend on other causes besides anchylosis. The most frequent cause is from gangrene of the cheeks, and

* On Anchylosis of Lower Jaw, by Dr. Wernher. Brit. and For. Med.-Chir. Review, Jan. 1852, from Oppenheim's Zeitschrift, Bd. XLIV.

† Langenbeck's Arch., vol. 1, p. 162.

Digitized by Google

other soft parts about the jaws, resulting from profuse ptyalism, followed by the formation of firm, unyielding cicatricial tissue, by which the lower jaw is held firmly in contact with the upper. This condition, of course, may occur in feeble subjects, where mercury has not been used, where sloughing of the cheeks or cancrum oris occurs, as a sequel of scarlet, or typhoid fever, or arising idiopathically.

Dr. V. Mott states, that according to his observations, immobility of the lower jaw may depend on three different causes:

First—The formation of firm, unyielding cicatrices, resembling, as it were, adventitious ligaments.

Second—Preternatural rigidity or dynamic contraction of the muscles themselves, resulting from the violent action of mercury upon the mouth and adjacent parts, exhibited for some form of fever

Third—Osseous union, by means of a bony plate extending from the coronoid process to the superior maxillary bone.*

He does not allude to that form of immobility depending on true bony anchylosis of the temporo-maxillary articulation.

Dr. John C. Hutchison, of Brooklyn, has a unique specimen, in which a strong bony projection $1\frac{1}{4}$ inch in length, $\frac{1}{2}$ inch in width, and $\frac{1}{2}$ inch in thickness, extends from the inferior edge of the malar bone, to the middle of the ramus of the right side of the lower jaw, forming a firm bony bridge between these bones. He obtained the specimen from a hospital patient, who died of dysentery, and he does not know the history of the case.

From the above observations, we may state, that immobility of the lower jaw may depend on three causes:

First—Cicatricial bands, resulting from inflammatory action, or sloughing of the part.

Second—Contraction or rigidity of the muscles.

Third—Osseous union between the inferior maxillary and the temporal, malar, or superior maxillary bones.

This last form may be due to—

First—Bony union of the alveolar processes.

Second—Bony union of the coronoid process of the inferior maxilla, with the superior maxilla, or zygomatic arch.

Third—Bony union between the malar and inferior maxillary bones.

Fourth—True bony anchylosis of the temporo-maxillary articulation.

Causes.—This last variety of anchylosis may depend on any of the various conditions, which would be likely to cause anchylosis else-

* Velpeau's Operative Surgery, 1856, vol. 3, p. 811.

Digitized by Google

where, viz: Inflammation of the joint, idiopathic, or resulting from injury; necrosis or caries of the condyle, or of some portion of the bone in its vicinity. This latter condition does not, however, in all cases result in anchylosis; I have in two cases removed a sequestrum, consisting of the entire ramus, with condyle and coronoid process together with a portion of the body of the jaw, leaving a strong involucrum, which allowed all the motions of the jaw to take place as freely as before.

DIAGNOSIS.—In order to distinguish osseous union between the upper and lower jaws, from the other varieties of immobility of the lower jaw, we have one positive symptom. The absence of all mobility of the lower jaw; more or less lateral motion can be obtained, in all other cases. This symptom was the one Dr. V. Mott relied upon in diagnosticating the cases in which forcible dilatation was justifiable. Berrut also considers it the diagnostic symptom. The history of the case, together with the absence of cicatrices, and the suppleness of the masseter and other muscles, will of course assist in the diagnosis.

Bony union of the alveolar processes could be determined by a careful examination, but in distinguishing between the anchylosis due to a bony connection between the coronoid process and the superior maxillary bone or the zygomatic arch, and anchylosis of the temporo-maxillary articulation, we of course might experience some difficulty.

Careful digital examination together with the history, would, I think, enable us to form an accurate opinion.

PROGNOSIS.—The most interesting points in regard to the prognosis of the cases where anchylosis depends on osseous union alone, are these: The muscles which move the lower jaw, do not undergo atrophy and fatty degeneration, to the same extent, in cases of anchylosis of long standing, as the muscles in the neighborhood of the joints of the extremities; and in cases where but one joint is involved, the articulation on the opposite side is not impaired. Dr. Wernher calls attention to this fact, in the following words: "It has been supposed by Cruveilhier and others, that anchylosis of the one side entails that of the other, by the complete immobility it induces; but in seven of the fifteen cases quoted, the joint on one side remained quite free. How little prolonged immobility is the cause of anchylosis, may be judged by the case now recorded, in which it had continued for twenty years, and by others of a much longer continuance, recorded by Walther, Cruveilhier, Howship and Kunkolz."

In my case, complete immobility had existed for more than three

Digitized by Google

years, and yet the patient had perfect control of the muscles of the jaws and free movement of the opposite articulation, as soon as the operation had been performed.

This condition of the muscles is, without doubt, due to the fact that, although the jaw may be immovable, the action of the muscles is kept up by various movements of the face.

Treatment.—The treatment of immobility of the lower jaw will of course depend on the cause of the difficulty. Some cases, resulting from cicatricial bands, will require the section of these bands and bridles, combined with forcible dilatation of the jaw. Where the immobility depends on contraction of the muscles, tenotomy may relieve the difficulty. In cases where there is a loss of soft parts, Esmarch's operation to form a false joint in front of the cicatrix, by the removal of a portion of the ramus or body of the bone, has been frequently performed with good results.

Rizzoli's operation, which consists merely of cutting through the jaw without removing any portion of bone, is not so certain in its results. In cases of true bony anchylosis of the temporo-maxillary articulation without loss of soft parts, Esmarch's and Rizzoli's operations have this disadvantage; a false joint established in the ramus does not permit the mouth to open in a natural manner. One side only of the jaw can be used, and consequently considerable deformity results when the mouth is opened. Excision of the condyle as practiced in the case related, allows the mouth to open in the natural way and leaves no deformity, excepting the cicatrix from the incision.

Excision of the condyle has been performed but a few times, and never, as far as I can ascertain, in the same manner as above described. George M. Humphrey, surgeon to Addenbrooke's Hospital, Cambridge, England, in 1854, excised the condyle for a case of chronic rheumatic arthritis, exposing the condyle by a curved incision from the side of the orbit, across the zygoma to the ear, passing a little above the temporo-maxillary articulation, and a little above the line of the orbicular branch of the facial nerve, and a second incision from the termination of the first, directly upward in front of the ear, across the zygoma again, cutting carefully to avoid the temporal artery. The flap thus made was reflected, and by a little dissection the condyle was brought into view. The neck of the condyle was then cut through with a narrow saw and the condyle removed with strong forceps.

The result was perfect. The facial nerve and temporal artery escaped injury.*

* Association Med. Journal, 1856, page 61.

Digitized by Google

Dr. Bottini, in 1872, communicated a case to the Royal Academy of Medicine at Turin.

The patient was "a lad, aged seventeen, who had fallen on his chin when seven years old; inability to open the mouth gradually set in, so that in a few months he was quite unable to separate the jaws. Bottini opened the mouth forcibly during narcosis and inserted a wedge. This, however, was so troublesome to the patient that it was removed. Resection was now determined on. A perpendicular incision was made on one side, and the head of the jawbone, after the periosteum had been separated, was removed by the chisel and hammer." This had no appreciable effect, and it was only after the operation had been repeated on the other side that the jaw could be freely moved.

The wounds were healed in six weeks, and the movements of the jaw were normal. Nothing abnormal could be found in the excised portions of bone; but the inter-articular cartilages were absent.* This report does not state whether the facial nerve escaped injury or not.

This is the only case which I am able to find, in which this operation was performed for immobility of the lower jaw. Heath, in considering the treatment of cases of this kind, states: "When the anchylosis becomes complete, the question will arise as to dividing the bone, or resecting the joint. I should have no hesitation in recommending the former, as at once easier and safer, since it would be impossible to saw through the articulation itself."

There is no doubt that excision of the condyle can be safely performed, and the only question is, how can the condyle be reached with the greatest safety to the patient? The facial nerve and Steno's duct must, if possible, escape injury. Any incision made directly over or in the immediate neighborhood of the condyle, so as to allow its removal, would, if great care were not taken, jeopardize these parts as well as leave a conspicuous cicatrix. For this reason I decided to make the incision along the posterior border of the ramus and the inferior border of the jaw, and by separating the attachment of the masseter, raise the soft parts so as to reach the condyle. The facial artery is the only vessel of importance likely to receive injury. The neck of the condyle could be cut through by passing a chain saw around it, and then, if possible, twisting out the condyle with a strong pair of bone forceps, or, as in the above case, cutting it away with chisel and hammer. The trephine was used in the case above related, because the neck of

* Biennial Retrospect of Medicine and Surgery. New Sydenham Society, for 1871-72.

Digitized by Google

Digitized by Google

Fig. 2.

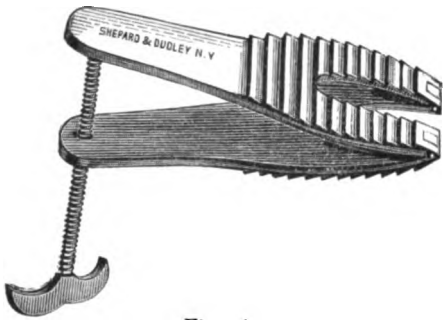


Fig. 3.

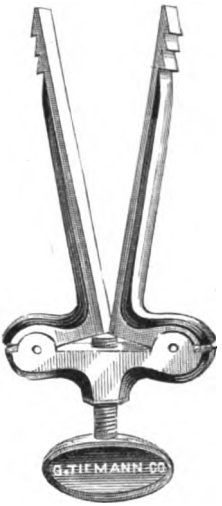


Fig. 4.

Fig. 5.

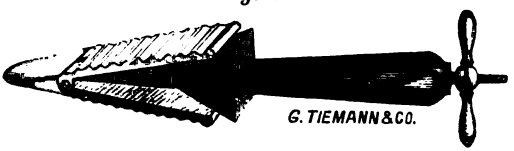


Fig. 7.

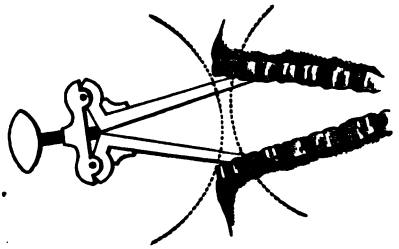


Fig. 6.

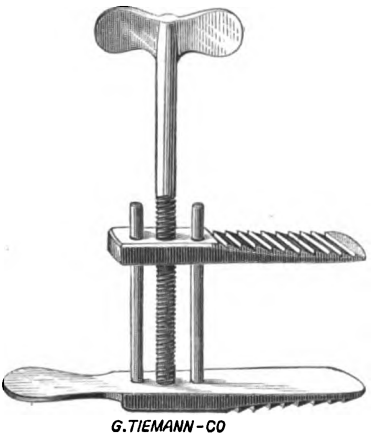
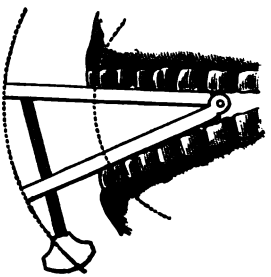


Fig. 8.



Digitized by Google

the condyle was so much enlarged that a chain saw could not be passed around it without great difficulty.

A few words in closing this paper on the construction of the various instruments in use for separating the jaws. The one used by Dr. Valentine Mott (fig. 3), although original with him, yet described and depicted by Scultetus years before; as well as the dilating forceps, invented by Dr. Delabarre (fig. 4), and described by Gross,* are not, in my opinion, so well adapted for this purpose as the instrument which is described by Roser, of Marburg, in his work on surgical anatomy. This instrument is represented by fig. 2. The blades are covered with lead, so as not to press too hard on the teeth, and open with the screw. By reference to the diagram, it will be seen that the curve described by the motion of the lower jaw, and the curve described by the opening of the arms of Mott's dilator, as well as Dr. Delabarre's dilating forceps, are in opposite directions (fig. 7), and consequently a great amount of pressure is brought to bear on the teeth of the upper and lower jaws, in a direction almost directly outwards, so that if much force be applied, the teeth will be pushed outward from their sockets. In using these instruments, I have found that patients complain of very severe pain as soon as a moderate amount of force is used. Roser's instrument, as will be seen by the diagram, describes the same curve, by the opening of its blades, as the jaw itself (fig. 8), and the pressure is borne upon the teeth directly upwards and downwards. Patients can bear considerably more force in this direction than they can when the teeth are pressed outwards. This is the only instrument, excepting Dr. Goodwillie's screw dilator (fig. 5), that I have found which acts in this, the proper way, and was the only one which could be used by my patient with any degree of comfort. The simple wooden screw wedge is another instrument which is used for opening the mouth, but its pressure upon the teeth causes much more pain to the patient than the dilator above described. Dr. Westmorland, of Atlanta, Geo., has invented a dilator, represented by fig. 6. This I have used, but it will be seen that the blades always remain parallel, and do not describe the curve made in the movement of the lower jaw.

---

* Gross' Surgery, 1866, vol. 2, page 436.

Digitized by Google

ARTICLE V.

Electrolysis in the treatment of Stricture of the Urethra.

By ROBERT NEWMAN, M.D., New York.

All the strictures of the urethra entrusted to my care during the last few years, have been treated by electrolysis. The results from this system of treatment have been very gratifying to me, and particularly so to my patients, who were kept under observation for some time after the operation. None were suffered to relapse, and the cure has been in every instance permanent. One of the worst cases of impassible stricture which came under my notice, was cured, and a No. 12 sound could be introduced by the patient himself. Fifteen months have elapsed; the urethra has retained the above calibre, and is in sound and good condition. Such clinical facts seem to warrant more than a passing notice in the records of successful surgical operations.

The object of this paper is to give a history of certain cases, the *modus operandi* of electrolytic treatment adapted to strictures of the urethra. By asserting that I have had no failures to record, that I have succeeded in every case, I do not wish to be understood, or even imply that every other treatment is to be condemned, that all other methods or operations for stricture should be abandoned, and that electrolysis alone should be relied on; or to express an opinion that *all* strictures *can* be cured by electrolysis. For the present I do not wish even to compare the different methods. Each must stand upon its own merits; each mode of procedure may possess advantages, and if properly selected and applied to each individual case, may result in entire or partial success. But having succeeded in curing some of the worst and most complicated cases of stricture of the urethra by galvanism, I certainly shall not abandon a method which possesses so many advantages, and has been so successfully practiced by myself, knowing, as I do, that the treatment is rational, scientific and reliable.

HISTORY AND BIBLIOGRAPHY.

The history of this operation is brief; the paucity of its literature is manifest. Crussel and Wertheimber made the first experiments, but did not succeed in establishing the operation, and legitimizing

Digitized by Google

it. It is freely admitted that the use of electricity in its diversified forms, with all kinds of instruments, for the cure of stricture of the urethra, has been attempted long ago; but the electrolysis under consideration, and its availability to cure stricture, hereafter to be more fully described, is of recent date. After researches in both foreign professional literature and our own, within my reach, I have not been fortunate enough to find more than a few scattered cases. Among the most important, and bearing directly on the subject, I find:

Mallez et Tripier, Traitement des rétrécissements urètraux par la galvano-caustique chimique négative, Compte Rendu de l'Acad. des Sciences. Bulletin Thérapeutique, Mai 30. Med. 58.

Mallez et Tripier, De la guérison durable de rétrécissements de l'urèthre par la galvano-caustique chimique.

Althaus in Goerschen's deutsche Klinik, No. 34–36. Heilung der Harnroehren-Stricturen durch die Electrolyse.

Keys' Electrolytic treatment of Stricture of the Urethra. New York Medical Journal, December, 1871.

Bautisto Campos, De la galvano-caustique chimique, comme moyen du traitement des rétrécissements de l'urèthre. Paris, 1871.

Dutrieux, De la galvano-caustique chimique dans le traitement des rétrécissements organiques de l'urèthre. Press. Med. Belge, No. 25, 1872.

Mallez et Tripier, Lancet, October, 1871.

Multiple Strictures of the Urethra by Electrolysis, by S. F. Frank, M.D. Medical Record, Feb. 2, 1874, p. 62.

Besides the above, we find the following two papers, not exactly belonging to the subject, still bearing some relation to it:

Cases illustrating the action of the continuous electric current on Spasms of the Bladder, Urethra and Ureters, by Reliquet, of Paris. Practitioner, August, 1872, p. 98.

On the detachment of Urinary Concretions from the Walls of the Bladder. Wiener Medic. Zeitung, Mai, 1872.

Theory of Electrolysis.

Electrolysis is the decomposition of a compound body by electricity. The electricity used in our treatment of stricture is the constant current of galvanism. The body to be decomposed must be a conductor, and must possess certain elements susceptible of decomposition by the galvanic current, and must contain water and a salt. Non-conductors are chalk, fat, oil, rubber, dry gases and a

Digitized by Google

multiplicity of other substances. Some are wholly, others are only slightly susceptible to the influence of the galvanic current. This knowledge is of great advantage, because it teaches that *all* strictures of the urethra will not yield alike to the electrolytic treatment. Success depends on the organic quality, form and composition of the neoplasm of the stricture. Blood and muscular tissues are good electrolytes, hence the inflammatory strictures readily yield to the electrolytic treatment. Fibrous tissues are more or less decomposed by its action, and that in proportion to the elements which enter into their composition. If the parts to be acted upon are devoid of water, its action will be slow, because water or moisture is necessary, and forms one of the real elements of successful decomposition. Chalk being a non-conductor, it follows that calcareous strictures, which are dry and brittle in their narrow calibre, will not yield well, if at all, to electrolytic action.

We will now consider the action of the two poles of the battery. If we decompose water by electricity, we find that the oxygen is attracted to the positive, and the hydrogen to the negative pole. Now we should remember that *pure* water is not easily decomposed, but the difficulty is overcome if the water holds salts in solution. If the water contains salt, the positive pole will attract the acids, and the negative pole the alkalies and bases. Hence it is that the positive pole acts like a caustic acid, and burns like fire, which is painful, leaving a hard retractile cicatrix.

On the other hand, the negative pole acts like a caustic alkali, which does not hurt during its application, and leaves a cicatrix which is small, soft and not retractile.

Having become acquainted with the different properties of the poles, which possess each their own specific powers, it is evident from the foregoing that for the immediate destruction of strictures, the negative pole must be selected.

The next important question which arises, and which is a valuable factor for successful treatment is, what is the best material to be used on the negative pole? We should select hard metals, those that stand in no danger of being decomposed or easily oxidized; hence platinum, gold and silver are best; but lead, brass or tin do well; even copper is available.

If we use the latter metals, the chemical decomposition may produce a small amount of precipitate, which is a slight objection, but not a positive hindrance to the ultimate success of the operation.

The specific action produced by electrolysis in the treatment of

Digitized by Google

strictures, has received different names: this diversified nomenclature has produced considerable misunderstanding, and time has done little to remove the confusion and obscurity in which the action of electrolysis is still involved.

Dutrieux calls it galvano-chemical cauterization. Dittel names it a chemical galvano-caustic. I wish to add my mite, hoping to help in removing the obscurity in which the action of electrolysis is still concealed underneath technicalities of scientific phraseology. My experience of its action, after observing it minutely in all its known relations, leads me to name this electrolytic action "Galvanic chemical absorption," and I depend mainly on the chemical decomposition caused by electrolysis.

It seems that all who have written and experimented on the subject mean the same thing, but expresses it differently. This diversity in the nomenclature has provoked the criticism of the editor of that special department in Virchow's Jahresbericht. Dutrieux, he says, depends for the action of electrolysis on the caustic effects of the negative pole, which leaves a soft and less retractile cicatrix, and wonders that Newman relies on chemical absorption as an effect of the electrolytic action!

That the same thing is meant, is evident from my previous statement, as well as from the description of the *modus operandi* by Mallez and Tripier, who lay great stress, and rely upon chemical, and *not* on the caustic effect which would result from the application of the positive pole, or the approximation of the two poles. Why, with such a definition, which is taken from Mallez and Tripier, the French surgeons call the action "par la galvano-caustique chimique," I do not understand, but believe I have proven that we mean the same thing.

Next, I must define my term "absorption," as some may object to it as not definite enough, or understanding that it pertains only to the action of lacteals. But I believe I am justified in using the term, as Webster's definition of absorption is as follows: "The process or act of being made passively to disappear in some other substance, through molecular or other invisible means, as the absorption of light, heat, electricity, etc." And such is the action exactly, as we will see hereafter.

The negative pole acts as a caustic alkali. If increased tension is used, it will destroy tissue, but mildly applied it acts as a chemical absorbent on the altered tissue, and restores the part to its normal condition. No one would think of curing a stricture by cauteriza-

Digitized by Google

tion. The history of that treatment in uterine diseases has left too many painful reminiscences. The Gynæcologist loudly protests against a treatment, which has proved so mischievous and unfortunate in uterine diseases, and this applies equally well to attempts to follow it in cases of stricture of the urethra. Many failures have been recorded, thus Dittel's three cases: "Billròth's Surgery, page 174." But may not these unfavorable results be attributed to badly selected cases, such as bony or callous strictures? These are unsuitable and are less amenable to the electrolytic treatment, for reasons stated before.

The theory on which my first experiments were made, has been corroborated by an experience of some years, and proved to me that electrolysis in curing stricture of the urethra, is of the most substantial value.

I will now consider the instruments best suited for proper application.

The Galvanic Battery.

A battery presenting a large surface will cauterize more rapidly and more intensely than any other known caustic.

By using a superabundance of electrical current, induced by a large surface with the hope of augmenting its sphere of action, too much inflammation is induced, destruction of the surrounding healthy tissue takes places, suppuration supervenes, and thus aggravates the disease. The current should never be strong enough in its action to lead to destruction of tissue; it should be confined to an effort to restore the affected parts to their normal condition.

The current of proper strength in its application should be confined solely to the diseased locality. This is not always easy to accomplish with the batteries at command, and the failures on record may be mainly due to their defects; one of the most important is the want of thoroughly controlling the strength of the electrical current. I have used the Drescher batteries in all my experiments, for the following reasons:

First.—The tension* of the current can be augmented gradually, cell by cell, without any interruption of the current, and the patient will hardly perceive the increase of intensity, which can be used above the power of Stoehrer's and other batteries.

* The French writers have used the word "intensité," just as we use the word quantity. But translators have rendered *intensité* into English by the word "intensity," and have used it in the sense of tension. This mistake of the translators has brought much confusion into the subject. It is better to dispense with the word intensity, and use only the terms "quantity" and "tension."

Digitized by Google

Second.—The *quantity* of electricity is reduced to a point sufficient to produce the most intense action on a very limited surface.

Third.—The quantity of electricity of *all* the cells can be increased or diminished at will, by the screw-lifting arrangement, by which the elements can be immersed into the battery fluid to any desired depth.

The size of the elements in many batteries is far too large; the quantity of electricity produced is too great, and there is "too much of a good thing." The electricity generated is too powerful to produce and fulfill its proper indication. The result of all this is, that if employed in the above way, too great a destruction of tissue takes place, and occasions great pain to the patient, who soon refuses to submit himself to a process which involves such suffering.

Another, and serious fault of certain batteries is, that they can only be graded by pairs. This arrangement involves a great objection, because the augmenting or diminishing of two cells at a time, alters the galvanic current and produces a sudden shock, which causes the patient pain and a general "malaise," which merges soon into nervous irritability, besides many other serious difficulties which I noticed during my first experiments.

I therefore prefer batteries which by their peculiar arrangements can be graded, one cell at the time, and by a Rheostat, can be divided into small units to overcome resistance.

The galvanic battery I use consists of many small cells; each cell contains two elements, carbon and zinc. The fluid in which the elements are immersed is diluted sulphuric acid and bichromate of potassa.

The catheter used for the negative pole consists of a metal bulb, to which a rod of wire is attached, and over which a flexible catheter is fixed, cut off at its extremity and connected with the metal bulb; a smooth and continuous surface is thus obtained.

The bulb is egg-shaped, about half an inch long, its length proportionate to its diameter. The flexible catheter acts as a perfect insulator, and at the free end, the rod is connected with the copper wire from the negative pole of the battery. The catheters are made in sets of different sizes.

The Physiological Effect of Electrolysis on Mucous Lining.

In describing the different degrees of quantity and tension of the current, the result of actual observation and experience, the salient points will be perhaps more intelligible if subdivisions be made.

Digitized by Google

The contact of the positive pole with the mucous lining by a metal, bulb-shaped catheter, causes great pain. The electrolysis thus applied feels and acts similar to a strong vegetable acid, destroys tissue, and is not easily borne.

But if the negative pole is used with the same electrode, no pain follows the application, provided the current is not too strong; it thus produces only a sensation of pricking and burning.

a. If a limited electrolytic power be selected and applied by the usual method, the current is gradual and slow in its action, and we observe—

First.—The mucous lining of the urethra is often covered with an alkaline secretion. The electrolytic action coagulates it in a semi-solid mass. The same result may be observed if the albumen of an egg be submitted to the action of both poles.

Second.—In the absence of this secretion, moisture only being present, a general stimulation takes place.

Third.—Agitation.

Fourth.—Lifting and loosening of epithelium.

Fifth.—Attraction and disentegration.

Sixth.—Coagulation of alkalies.

Seventh.—The epithelium shrivels up.

Eighth.—Detached and lost.

Ninth.—Mucous lining dries, and gradually changes color from a pinkish red to white.

Tenth.—At the commencement of the caustic action, absorption slowly takes place, tissue is absorbed and disappears.

Eleventh.—The metallic extremity of the bougie insinuates itself in the deeper tissue, producing a depression; an aperture is made which forms a new passage.

Twelfth.—The electrolytic action having made a passage, the albuminous secretions on the walls of the urethra are acted upon by the negative pole coagulating it, and bearing resemblance to boiling froth.

Thirteenth.—By degrees a scab is formed.

b. Electrolysis may become caustic in its action if too strong currents are used, destroying tissue, leaving a denuded surface behind, which in the healing process throws out plastic lymph, fills up the cavity, and forms solid and adherent walls.

c. If electrolysis of great power is used, it rapidly opens a passage. The perforation thus made forms a scab upon the walls of the urethra. To illustrate this physiological effect, and at the

Digitized by Google

same time the power of the battery used, I will describe here a few experiments made on dogs.

Experiment I.—A good-sized dog was placed under chloroform, merely for the purpose of operating and observing, without being interrupted by the animal's struggles. The application was made on the external mucous lining of the penis, which was pushed forward in front of the sheath. To the positive pole of a 40-cell Drescher galvanic battery was attached a forceps, with which the lower portion of the penis, where the prostatic portion is situated, was firmly held. This prevented the penis from slipping back, and the effect of the positive pole could be observed. The negative pole, connected with the copper wire, was a silver bougie, egg-shaped, the size corresponding to No. 0 wire gage. The circuit was completed by bringing the bougie as the negative pole in contact with different parts of the penis. Distinct effects were produced, as described before, in the following time:

5 cells produced distinct effect in.....5 seconds.
10 " " " ..... 2 "
20 " " " ..... 1 "

When all forty cells were used, a boiling commenced immediately, smoke arose, a hissing sound was heard, a froth was formed around the point of the bougie, and a hole was produced in a short time. The effect produced by the two poles differed widely, and could be observed as follows: The positive pole had caused a destruction of parts in an uneven, ragged manner; the surface looked like an ugly sore of a yellow color, mixed with grey at the margin. It simulated somewhat the ulceration of a chancroid. At the negative pole were seen only points, small in circumference, of a whitish color. Even a little was left of the pinkish hue, and there was no destruction of tissue. A smooth surface presented, but the normal lubricating moisture had given way to a dry state. This dryness at the negative pole, and the destruction of tissue, with an ulcerating surface at the positive pole, gave rise to a partial phymosis afterwards.

Experiment II.—A dog was prepared as in the first experiment. The positive pole, by means of a forceps, held firmly the mucous lining of the penis far back, where the prostate lies. The bougie, of an egg-shaped form, connected with the negative pole, was introduced into the urethra two and a half inches deep. Then the electrolysis was used with all forty cells at once, and continued for twenty seconds. A boiling was distinctly seen and heard around the negative pole. At the positive pole a destruction of tissue and an ugly

Digitized by Google

sore was produced, exactly as in the first experiment. The dog felt sick, had no appetite, and could not urinate for two days. The malaise was increased by the sore and the destruction at the positive pole, which caused again an inflammation and phymosis. After two days, the obstacle in the urethra gave way at once, the plug formed by the electrolysis popped out, and the dog passed water strongly mixed with blood. The dog made finally a good recovery.

Many other experiments have been made, and all prove the correctness of the theory explained before. The last experiment was only made to ascertain the tolerance of a strong current. As a therapeutical agent I condemn such a method, and would not practice it on a patient. My experience has proved conclusively that the means of curing stricture consists mainly in using *weak currents;* and mischief may be done by strong currents, which destroy tissue rapidly, instead of causing chemical decomposition.

I shall now briefly consider the

THERAPEUTICAL ACTION OF ELECTRICITY

in disease. For convenience, it is advisable to state the different forms of electricity.

The exact action of all forms of electricity is by no means thoroughly understood, and it is hardly within the scope of this paper to advise or recommend which method or current should be adopted, or in what disease, organ or tissue this or that form or current is to be employed. To enter into such a field of inquiry would involve researches of much labor to collect and collate statistics, and tabulate them; and such a work, however conscientiously performed, would, from the very nature of things, be defective, open to grave objection, and be subject to criticism. But to comprehend the conclusions drawn from the theory upon which I base the success in curing strictures of the urethra by electrolysis, it becomes necessary to describe in general terms the modes and forms in which, how, and for what purposes electricity is generally used.

As seen by the foregoing, the two poles differ in their action, and therefore give different results. It further appears that the poles vary in their action with the material used. For example, by a general application with sponge electrodes, a certain result is obtained; the same current, similar in every way, will, by the use of a metallic electrode, become electrolytic. The Faradic or induced current, as a general application, with the sponge electrode, is mainly used (and even preferred) to ascertain muscular contractility. Hence it is

Digitized by Google

employed in paralysis, because it vitalizes, and stimulates the muscles into activity, sustains the action of the heart, impresses the circulation, and exerts a powerful influence over the motor nerves.

If the Faradic current is employed with metal electrodes, or a sponge electrode as positive, and the bougie with metal bulb as the negative pole in the urethra, it prevents, or cures spasmodic action; hence, is a cure for spasmodic strictures.

It appears that the two poles are identical in their action, and manifest no significant difference, at least it is not so marked as in galvanization.

The galvanic, or constant current, as a general application, may be used with more or less advantage or benefit in all cases (although the Faradic is preferred as a general tonic and stimulant), and acts as such principally on the sympathetic, motor, and sensory nerves, and its effects to equalize the circulation are very significant. But if galvanization is used with metal electrode to obtain electrolytic action, the result obtained will be widely different.

The positive pole will coagulate the blood, attract acid and oxygen: in fact, by a peculiar action the battery has yielded an acid product, which acts as actively and produces as painful and sloughing a sore as will the most powerful mineral acid, and leaves behind a hard and retractile cicatrix on the tissue with which it has been in contact; while the negative pole will dissolve blood, augments its fluidity, attracting hydrogen, coagulates albumen, attracts alkalies, and acts as a caustic alkali on the tissues, leaving behind a small, soft cicatrix, which is not retractile.

Now, the knowledge of the foregoing facts is of paramount importance, and they are all the more essential, inasmuch as they happen to be the great factors with which we should be acquainted for the intelligent application of the method under consideration.

METHOD OF APPLICATION.

The first thing the operator will have to consider is, the pathological condition of the particular stricture he has to deal with. Next, to devise a plan for his future action, select the method he intends to employ, and the treatment he means to follow; what he wishes and what he can accomplish in a single seance, and what he reasonably can effect. He must know WHEN to operate, and the time that should elapse before the operation is repeated. The patient should not be subjected to pain.

Of course no stereotyped rule can be laid down which should be followed by all alike. Each case depends on its own inherent pecul-

Digitized by Google

iarities, and must be treated accordingly. The successful issue of each case depends entirely on the operator's choice of method, and he should employ that one which offers the best chances of success, and which he deems the most effective.

There are three principal methods, as follows:

First.—Electrolytic action, by mild currents, from batteries united for tension, produces gradual chemical absorption, as before described. The current is gradually increased or decreased.

Second.—By galvano-cautery. By reason of its great tension, this agent violently forces a passage. The effect of this powerful action is swiftly to burn its way through the impediment, the result being a firm and hard scab on the walls of the urethra.

After the employment of the galvano-cautery, the patient must be left alone, and not interfered with until the scab has come off, and many weeks must elapse before a normal mucous lining is formed, even on a healthy urethral wall.

A scab thus produced, firmly adheres to the walls of the urethra, and cannot, without danger, be removed by the operator; interference would be highly reprehensible. Non-interference being compulsory, from four to six weeks are consumed before it becomes detached. If an attempt be made to accelerate the separation by instrumental manipulation, serious consequences are sure to follow.

The boundary between the scab and the adjacent healthy mucous lining is always a weak spot, and any exploring instrument used in contact with, or beneath the scab, might cause rupture of the urethra. The best rule I can suggest is, "Non-interference is the best policy."

Third.—The third method is a mixed operation, or a combination of the former two. The passage is made by the action of a powerful electrolytic current, which may denude the surface of the urethra; the walls are kept apart to prevent adhesion. This indication is fulfilled by the introduction of the catheter immediately after the operation, and retaining it *in situ.*

My predilections are in favor of the first method, and I use it because it is more desirable. If circumstances permit, I operate with it in preference to all others, because it is safe, and never has been followed by accident or ill effect. In fact it is the procedure here advocated, practiced and illustrated by cases. It is the method which treats the stricture through mild currents, by a "*galvanic chemical absorption.*"

The third method I only practiced when obliged to do so; that

Digitized by Google

means, when the first method cannot be used with good effect, then the current must be increased. Only a very few aggravated cases will need this procedure. The after treatment must be conducted carefully, as the retention of the catheter in the urethra may cause irritation, cystitis and urethral fever. But even if it occasions, under very unfavorable circumstances, some inconvenience, it is preferable to the otherwise unavoidable perineal section, which, according to statistics, is dangerous. This method is particularly indicated, if the stricture is impassable and tough. The strong current may denude the walls of the urethra, and the plastic lymph thrown out will cause adhesions. To avoid such adhesions, the catheter is retained. The new entirely flexible rubber catheter is a great improvement for this purpose, as it is less irritating and self-retaining, thereby avoiding the dangers which might otherwise follow.

The second method I never have practiced, and cannot say anything about it, but it appears to me dangerous. It is mentioned here only as a theory, the practice of which I condemn.

A modification of this galvano-caustic method has been used by Dr. Wakeman, of this city. The doctor described his method to me in this manner: He uses the same variety of battery as I do, but attaches to the bougie, which is pushed down to the stricture, both poles. Thereby both poles are united, and the current acts on the same point, the effect of which must be a galvano-caustic. Dr. W. says he has used this method with success.

To the want of method in the operator, or to the badly selected cases, the failure and ill success of the operation may mainly be attributed. By well directed examination, cases suitable to the electrolytic treatment should be taken.

EXAMINATION OF THE STRICTURE.

Stricture is a pathological condition of the urethra, which by alteration of tissue has narrowed its calibre. Authors who have written on this subject, and enriched by their works its literature, have named different kinds of urethral strictures, divided and subdivided them. I deem this nomenclature of little importance, and unnecessary for my present purpose. For convenience I will, however, define the causation of the alterations found in the tissue.

The object of surgical interference is the restoration of the urethra to its normal physiological and anatomical condition, which includes power, healthy action, and, above all, its form and natural calibre. This being accomplished, the cure is completed. The method which will accomplish this gratifying result with the least pain or incon-

Digitized by Google

venience to the patient, with least interference with his daily avocation, is certainly the best.

The history of a case is always an important factor in its diagnosis. This maxim holds good in stricture of the urethra. It will often reveal its primary or remote cause; the cause will indicate, to a certain extent, the kind of stricture we have to deal with, and this contributes much towards a successful issue, and a great deal will be accomplished. If this is satisfactorily done, it will aid materially in determining the method to be relied on. For all practical purposes, we may divide strictures in three classes:

1. Spasmodic strictures;
2. Inflammatory strictures;
3. Organic strictures.

Spasmodic strictures may occur as a consequence of irritation, venereal excesses, masturbation, excess of acid in the urine, pyelitis, diabetes mellitus, arthritis, cystitis, nervous debility, etc. I have already observed that spasmodic stricture is amenable to cure by the Faradic current. This current is of much value if employed to confirm the diagnosis; but spasmodic contraction of the urethra, usually called stricture, is not a *real* stricture, and has no bearing on, or relation to, the electrolytic treatment, and is here referred to merely as a comparison.

The last two kinds of stricture are amenable to treatment by electrolysis. Both are generally the consequences of neglected acute urethritis, or the result of traumatic lesion. I have no intention to describe in this paper the different forms of strictures; I confine myself to the delineation of the last two. In the inflammatory stricture the calibre of the urethra is narrowed by the product of inflammation thrown out by exudation internal to the mucous lining. The case may be complicated by the presence of more or less granulations; whereas in organic stricture the calibre is lost by the pressure upon the altered parts, and heteroplasia of the deeper tissues. The knowledge of this pathological condition is a fact of much value for the intelligent and successful application of electrolysis. If this is understood, it necessarily follows that the organic stricture needs a stronger, and the inflammatory a milder current of galvanism in order to effect chemical absorption. Certain facts should be inquired into concerning the history of the case, such as the general condition of the patient, see whether inherited diathesis can be discovered, a peculiar dyscrasia, or if any complication be present at the seat, or anywhere adjacent to it. For example, if the stricture be compli-

Digitized by Google

cated with cicatrices; if there is syphilis, or tertiary symptoms. If either of these complications be present, the case is not a favorable one for electrolysis. The patient, under these circumstances, needs first constitutional treatment. Having now ascertained the history of the case, and noted carefully all its details, the investigation is still further continued by direct examination of the stricture in the following manner:

1. By instrumental manipulation and digital touch.
2. Exact measurement.
3. Ocular inspection.

1. *The digital touch.*—The exploring instrument transmits to the fingers certain sensations, which experience soon classifies, and which culminate in a highly tactile expertness. I use for the purpose a whalebone *bougie à boule*, which has a small, olive-shaped head and slender neck; this adds to its flexibility. Such an exploring instrument gives, from its peculiar shape, a delicacy of touch not to be obtained by any other known bougie. It defines with professional certainty the nature of the stricture; the progress of altered tissue can be ascertained and defined by it with a comparatively small experience, and with great certainty. I will now divide the progress of the stricture, and for convenience will admit four stages.

Assuming that the diagnosis has been made, and the preceding means employed, in order to ascertain the condition of the stricture, certain sensations will be revealed by touch; and in order to better comprehend this, I shall compare them with some well known material.

1st stage conveys a feeling of velvet or velveteen.

2d stage conveys a feeling of paper.

3d stage conveys a feeling of parchment.

4th stage conveys a feeling of cartilage.

In the normal state of the urethra, the bougie glides with comparative ease over its moist mucous lining. The skilled finger will readily detect any alteration or deviation, its relative and comparative severity, and the slightest encroachment on its normal standard will be revealed. The velvet touch represents a slight alteration only.

The *paper* touch represents the inflammatory stage.

The *parchment* touch represents fibrous tissue.

The *cartilaginous* touch represents calcareous or callous deposit, and signifies the worst form of stricture.

By the use of the olive-shaped whalebone bougie, the defects or

Digitized by Google

any abnormal condition of the urethra along its whole tract is soon detected. The instant the bougie enters the stricture, a peculiar feeling is manifest to the fingers of the operator; its penetration is announced with a great degree of certainty; there is a peculiar grasp, "a taking hold," which is distinctly felt on entering or withdrawing the bougie.

2. *Measurement.*—In order to ascertain with certainty the exact locality, length, size, etc., of the stricture, I generally introduce into the urethra a sound as large as the meatus will admit; by this manœuvre we ascertain at the beginning of our manipulation, the normal calibre of the urethra. The sound is then pushed gently forward, until we reach the stricture; that being accomplished, we carefully note in inches, by actual measurement, the distance the first stricture is met with from the meatus. Next we ascertain how large a sound the stricture will allow to pass; at the same time an attempt is made to ascertain the length of the stricture. Having discovered the available sound, the exploration is continued until the whole of the stricture has been explored. If any more strictures are discovered during the investigation, they are measured in the same manner as the first; a note of their topography is made and carefully recorded, because in all future operations the perfect knowledge of the localities of the impediments is of extreme importance for their proper treatment.

3. *Ocular inspection* by the endoscope will reveal important facts, such as form and color, character, or any complication by which the case may be surrounded.

The form of a stricture is not of necessity always annular. The contraction may vary, and assume many different forms. Thus, they may be irregular slits of different sizes, and in all directions; oval, round, square, triangular and serrated, in fact of infinite variety.

A fact of vast importance and an extremely valuable factor in the diagnosis, is the following:

When the tube of the endoscope is withdrawn from the urethra after an exploration, if the stricture be sensibly indurated, and especially if it be a slight one, the canal closes immediately behind the tube with great abruptness, as it is withdrawn; a circumstance which is in striking contrast with the gradual closing observed on the withdrawal of the instrument from a healthy urethra.

After a careful and minute examination is made, and the state, size, etc., of the urethra duly noted, a plan of action and future

Digitized by Google

treatment in accordance with the previous principles enunciated is decided on, and immediately carried out.

The Modus Operandi.

First.—The susceptibility of the patient to the galvanic current is to be ascertained, and is accomplished in the following manner: The two sponge electrodes are grasped in the palm of the hand; the metallic slide is carefully and slowly moved onwards, cell by cell, the strength of the current is thus entirely under the control of the operator, and should be augmented until the patient feels a pricking sensation. The toleration with which the patient endures the current without inconvenience, indicates the tension suitable for the operation, and may be varied according to circumstances; still, it should always be in accordance with the well-known laws and influences which govern electricity.

The position which the patient should assume during the operation, is a matter of slight importance; his own convenience should be consulted; he may either stand or sit, or may lie on his back with his knees drawn upward. In my practice the patient generally stands in front of me. Anæsthetics are not used, because I deem them unnecessary. On the contrary, I want the patient conscious, so that I may have the advantage of his statement as to the sensations experienced, during the progress of the operation, which, if rightly performed, occasions no pain.

One of the bougies with metal bulb, as already stated, is now taken up; the size to be selected will depend on the method determined upon.

If the stricture is not too firm or fibrous, I generally commence with a bougie which is three or four numbers larger than I judge the stricture to be, and on the well based supposition, that the current will, through its peculiar action, absorb the stricture to such an extent, that the dilatation it produces will be equal to the difference of three or four sizes.

Having ascertained by actual measurement the locality of the stricture or strictures (if there be more than one), I push a small India-rubber ring over the bougie for each of them. This little manœuvre has many advantages; not the least important is, that I am made aware as soon as the india-rubber ring arrives at the meatus, that the extremity of the bulb must be in contact with the stricture.

Having the plan of the urethra through actual measurement

Digitized by Google

before me, I operate with additional certainty, and beyond a peradventure, as to the part which is acted upon.

The operator of some experience in this kind of manipulation is always made perfectly aware by digital touch where the sound is, at any time during the operation. The bougie, well lubricated, is now connected to the cord electrode of the negative pole, and then introduced into the urethra down to the first stricture; a sponge electrode is attached to the positive pole of the battery; the current is completed by placing the sponge either over the superpubic region, the thigh, or inner aspect of the patient's hand. I prefer the latter, because it is more pleasing to the patient, without weakening the effect of the negative pole. The current should now be very slowly and gradually increased, one cell at a time, or still more divided by resistances, until the patient feels there is a certain strength in the current. The galvanic current should never be so strong as to cause either pain or a burning sensation; because, in that event, the current in its action would approach the galvano-caustic, instead of the electrolytic, which is not contemplated. Generally the power obtained from eight cells is adequate, and will fulfill all the indications, and be found sufficient to overcome and penetrate the stricture. It will be found that an application of three to five minutes will be enough to make an impression; less time may answer for the bougie to advance and slip through the impediment.

During the whole of the operation, the bougie must be held loosely and gently in its place against the obstruction; all pressure or force, however slight, must be avoided. The bougie will take care of itself, doing its own work by the electrolytic power its action involves; whereas. pressure would not only defeat the object and purpose of its application, but expose the patient to serious danger from hemorrhage, or even rupture of the urethra.

The operation being completed, care should be taken to reduce the battery to 0, by gradually moving the slide back to the starting point, cell by cell, and only one at a time. When the slide is returned to the point from which it started, the current should be interrupted.

It will be observed that on withdrawing the bougie electrode, there is found surrounding its metal bulb a frothy, yellowish mass, which bears a strong resemblance to coagulated albumen. This product is part of the stricture, which has been decomposed by the electrolytic action of the battery. There are failures on record, but in my opinion this want of success is mainly due to a too prolonged or a too frequent application of the current, and to the causes previously

Digitized by Google

enunciated. The applications, to warrant a successful issue in any given case, should be repeated at intervals of at least two weeks, and in some instances a longer period should elapse before I would repeat the operation. However, if all things are favorable, and circumstances give me absolute control of the case, I would prefer a period of four weeks to intervene between the operations. This treatment must be continued until the urethra has recovered, and resumed its normal calibre, whatever this may be. As a rule, every patient may be well satisfied if his urethra admits a No. 12 English sound, and has no reason to complain that a stricture is troubling him. But if a large man has a normal urethra, the calibre of which corresponds to a sound No. 15 or more, our treatment with electrolysis must be continued until the size of such urethra is sufficiently restored to correspond with the normal calibre. At times I have found a normal urethra of the size of No. 11, the meatus even a little smaller, admitting the No. 11 sound only after careful stretching; and it was clearly proven that such urethra never had been larger. In all such cases I am well satisfied with a restoration to size No. 11, and would not think of enlarging such a urethra any further.

The question may be raised here, whether our treatment is ever followed by urethral fever, cystitis, or any other complication. To this I answer, that during the three years in which I practiced the *first* method, I never had any untoward symptom. But any complication may arise if either the patient or the operator give cause. Urethral fever is caused by a rough handling of instruments, or an over-exertion of the patient after the operation. Avoid the causes, and you will have no consequences. The other methods of electrolysis heretofore mentioned may have intercurrent effects from the strong currents used, or by complications of the disease, which no surgeon can control. For this reason I only recommend the first method; but the third method must be employed in certain cases, in order to avoid more dangerous means, which is the more justifiable, since Dr. Bumstead, in his excellent work, admits that "either of the modes of treatment (of stricture) now described, may be followed by rigors and other unpleasant symptoms, which are known as urethral fever, and sometimes terminate in speedy death." (Venereal Diseases, p. 300.) To illustrate this, I will now narrate an interesting case, in which circumstances forced me to practice the third method in order to avoid the more dangerous perineal section.

Case 2131.—*Traumatic impassable stricture of nine years' standing treated successfully by the third method of electrolysis.*—Mr. S. M. S.,

Digitized by Google

of Hartford, was sent to me by Dr. Storrs, of Hartford, on July 22, 1872, with the following history of a traumatic stricture: Mr. S. was in the mounted service during the war. In 1863 contracted an abscess in the perineum, which resulted in a urethral fistula. In 1864, Dr. Blackman, in Cincinnati, closed the fistula. The operation was a cutting one, and the wound was left open to heal by granulations. Soon a stricture of the urethra followed, which was treated by the introduction of sounds at intervals. The stricture grew gradually worse, until no instrument would pass it. For the last six weeks the urine only dribbles away by drops, and not the smallest sound or even catgut will pass the stricture. The kidneys are disturbed, occasionally congested. The urine is pretty constantly albuminous, which is occasioned by the difficulty of passing water. For years he never had entirely emptied his bladder, as a residue was always left, causing cystitis. The ureters were often filled with urine, producing disturbance of the kidneys. On examination, I found that a large steel sound No. 12 entered the meatus easily, and passed down to the seat of the stricture, which was six inches from the meatus. Whalebone bougies, catgut and other instruments of the smallest size were tried, but none passed the stricture. Next an examination was made with the endoscope. The large tube enters, with a little difficulty, a distance of six inches, where it encounters the stricture. On inspection, we see that the stricture is well formed, and a plastic exudation, like a duck's web-foot, presents a grayish white appearance, with elevations standing out like granulations. On the right side the remnant of the opening can be seen, very narrow, irregular, congested, irritated, and bleeding on slight touch. Next electrolysis was used with Drescher's galvanic battery. A bougie No. 6, the end of which had a metal bulb, was introduced to the seat of the stricture, and attached to the battery as the negative pole; the circuit was completed by the sponge electrode in the hand of the patient. The current was kept up for eight minutes, but the bougie would not enter the stricture. Then a bougie No. 3 was substituted, and passed into the stricture slowly, and worked its way until it was seven inches in the urethra. Here it could be felt distinctly that the bougie was at the end of the stricture, and it was then pushed easily into the bladder to its whole length—nine inches. Hence the stricture was one inch long, from six to seven inches deep. After this operation he felt somewhat relieved.

Aug. 12.—Battery of twelve cells for twenty minutes, with metal bougie No. 6, entered the stricture three-eighths of an inch, but

Digitized by Google

would go no further, nor pass the whole stricture. Hemorrhage prevented further operation.

Aug. 13.—Has had a good night's rest. Urine passes with difficulty, and burns a little. No instrument will pass the stricture. Chloroform was given, and electrolysis used. A steel sound No. 7 as negative pole was introduced, and full twenty cells used for twenty minutes. At last the sound passed the stricture and into the bladder. Chloroform was then discontinued, and a bougie No. 15, with a metal end, and the other part insulated, introduced as the negative pole. The patient was conscious, and saw how the bougie No. 15 passed through the stricture into the bladder. The bougie was slowly withdrawn under a galvanic current of fourteen cells. The patient felt no bad effects afterwards, no pain. One hour afterwards he passed water. He left for home in a few hours.

Sept. 9.—After last operation he has improved, and passed a steady stream of water, equal to about No. 3 or 4. But within the last few days he has grown worse, and the urine only dribbles away with difficulty and pain. Endoscope (large tube), shows an immense inflammation and irritation at the stricture, and many small granulations have sprung up; therefore it was thought not advisable to interfere operatively at this time, as no good result possibly could be expected under the circumstances. In order to allay irritation and gain space, urethral suppositories were ordered.

Sept. 15.—Feels better; says in five years he has not felt so well. He passes water better, and is free from any irritation or pain.

Sept. 17.—His constant hard labor in his business, and the travels on the railroad, have excited the parts to such a degree, that he has a relapse, and cannot void urine, which only dribbles away in drops. No instrument will pass the stricture, not the smallest. My friend, Dr. W. H. Maxwell, of this city, saw him in consultation, and coincides that an operation for his relief is unavoidable, but is not advisable here in a hotel, where our patient is without care, away from his friends. Consequently he went home, and on September 25th the operation was performed in Hartford, in the presence, and with the kind assistance of Drs. Storrs, Fuller, Ellsworth and Russel, all eminent practitioners of Hartford. Under chloroform another effort was made to overcome the stricture, which was still impassable to all instruments. Then the electrolysis was used, but my usual bougies were not stiff enough, and becoming too flexible, might have made a false passage. Now the only alternative was a different form of electrolysis, with strong currents, to overcome the stricture, or

Digitized by Google

perineal section. But, as this latter plan could be pursued if the other failed, therefore electrolysis was decided upon. A steel sound No. 7 was introduced to the seat of the stricture, and the free end connected with the negative pole of the galvanic battery. The circuit was completed by a sponge electrode as a positive pole, and held firmly on his thigh. The electrolysis was kept up with twenty cells for nearly half an hour, during which time the sound made slow but steady progress. The advance was directed with one finger in the rectum, and only guided by the anatomical relations. At last the sound could be moved within the bladder. In consultation, the plan of the after treatment was decided upon, of which the important point was to keep the urethra open, and thereby to prevent adhesion. The patient was then left under the care of Dr. Storrs, to whose judicious treatment I am indebted for the final result. Dr. Storrs' notes are as follows:

Wednesday night restless; first micturition only blood; second time, before daylight, a full stream. Ordered morphine, gr. ss.; dose every two hours.

Sept. 26.—Morphine only two doses; pulse 120; sensibility of skin and thirst; urine in full stream.

Oct. 1.—Urine with more difficulty; smaller stream and straining; pulse 80; catheter No. 3 passed, then a No. 5 was left for the night; suffering pain, and frequent vomiting.

Oct. 2.—Catheter removed; patient fell asleep; when attempting to urinate, the flow ceased suddenly; after pain and straining, a calculus was voided; then the urine flowed in a large stream, and in an easy way, such as had not been known for years.

Oct. 5.—Catheter No. 5, easy.

Oct. 21.—Catheter No. 11, easy; considered well.

Dec. 12.—Sound No. 12 introduced by himself.

I firmly believe that the calculus voided by the urethra was encysted in the bladder near the sphincter, and that the electrolytic action loosened it from its encasement. The sudden stoppage of water on Oct. 2, was caused by the calculus dropping into the urethra. The patient has been kept under observation, and has remained well. Only to confirm the success, he passes, in long intervals of many months, a sound No. 12 into his bladder, and reports well.

The first method, as described before, I practice now almost exclusively, and consider it the only safe one. I have about thirty cases

Digitized by Google

on record, of which the following, in brief, I will mention, as details would cause too much repetition:

Case 2045.—*Two Strictures, Complication of Syphilis.*—W. H. B., an actor, of this city, came under my treatment in March, 1871. Found on examination two strictures at one, and at five and a half inches. Had syphilis, which aggravated the strictures, and undoubtedly this complication caused the strictures to impart a feeling of cartilage, which brings them almost under the calcareous species. The patient received constitutional treatment, and a few seances of electrolysis cured the strictures. He has been heard from recently, and has remained well.

Case 2092.—*Two Strictures, Chancroid. Failure of Dilatation. Success with Electrolysis.*—R. A., hotel keeper, came under my treatment in March, 1872. Had been treated in the country for stricture by dilatation, with no success. Found a chancroid in the urethra, which was treated first. The two strictures were found situated at one and a quarter, and four and a half inches from the meatus, respectively.

Mar. 22. Electrolysis was used with a bougie No. 10, with a metal bulb as negative; positive electrode in the palm of the hand. Ten cells of the galvanic battery were used for nine minutes, and the bougie passed slowly through the strictures into the bladder.

April 14. The operation was repeated with a bougie No. 12. The patient has been heard from only recently, and has not had a relapse.

Case 2098.—*One Stricture, Spermatorrhœa, Impotence, Melancholia.*—March, 1872: R. T., merchant, in Philadelphia, came to my office in an advanced stage of hypochondriasis, complaining of general malaise, spermatorrhœa, impotence, small stream of water, pain in the urethra, etc. A steel sound No. 12 entered the urethra easily, but was arrested at seven inches. Sounds of smaller size were all arrested likewise at the same point. There is no doubt that a stricture exists, and at last a sound No. 7 passed it with difficulty. The trouble must exist either at the junction of the membranous and prostatic portions, or in the latter. Galvanism was used with ten cells. Bougie No. 10, with metallic end as negative into the urethra; met the same obstruction at seven inches. The positive pole was a nickel bulb, and grasped firmly with the closed hand. After five minutes of the electrolytic current, the bougie passed the stricture slowly, and slipped into the bladder. The withdrawal of the bougie was followed by a thick gleety discharge. It seems that this matter had accumulated behind the stricture, irritated the pros-

Digitized by Google

tatic portion and the ducts, and thereby was accessory to creating a spermatorrhœa. On passing water, shreds came along of a thick, white mass, which were the product of electrolysis. The operation has not caused pain, and the patient traveled home without any unpleasant feeling.

April 16. On examination with a sound No. 10, found the stricture at the exact place. The sound passed the stricture after persistent and patient efforts.

Then the galvanism was used as before, with a bougie No. 12 as negative, and with the same result.

May 9. In Philadelphia, a sound No. 12 could be easily passed into the bladder, which proves that the stricture is cured. The patient has been kept under observation for two years, and was seen only two weeks ago; he is perfectly well; has been married since, and is the father of a healthy child.

Case 2129.—*Gonorrhea and Stricture.*—July, 1872: M. M., merchant, has a gonorrhoea for four months, which has been aggravated by strong injections, which was followed by phymosis and epididymitis. On examination, found a large urethra; at one and a half inches a stricture, which permits the passage of a No. 9 sound; at five inches a soreness is encountered, which was afterwards diagnosticated by means of the endoscope, as granular urethritis. After proper treatment of the complications, the stricture was cured by electrolysis in three seances, as follows:

July 30. Galvanic battery ten cells. The bougie No. 12 absorbed the stricture in five minutes.

Aug. 17. Bougie No. 13 passed the stricture in five minutes, during which the galvanic current was gradually increased to fourteen cells.

Sept. 14 Galvanism with nine cells for eight minutes. Bougie No. 15 passed through the whole urethra slowly.

Patient was ordered to introduce sometimes a No. 15, with an ointment, in order to overcome and heal the soreness of the urethra.

He has been seen since frequently, and during the twenty months following the electrolytic treatment, no relapse has occurred.

This is a typical case in which circumstances permitted the treatment to be carried out as recommended in a former part of this paper. The urethra of this patient has retained the calibre of No. 15.

Case 2155.—*One Stricture and Gleet.*—Nov. 1872: Mr. P. had

Digitized by Google

gonorrhœa fifteen years ago ; Cystitis with hæmaturia one year ago, and since, a serous discharge with diminished stream of water.

Found one stricture one inch from meatus, which was cured with electrolysis in two sittings. Patient has left the city, and has not been heard from since.

Case 2162.—*Gonorrhœal Stricture.*—Dec., 1872 : W. R. B., clerk, had gonorrhœa last spring. The discharge ran for five months. Last week had connection, and found on the following day a discharge ; it has now run slightly for one week ; stream of water is small ; straining troublesome ; *bougie à boule* enters into a pouch at two and a half inches ; sound No. 11 encounters a stricture at five and a half inches ; therefore, it seems that the discharge emerges behind the stricture, and is caused by it. Conclusion is, the cure of the stricture will remove the discharge. Two galvanic applications were made at intervals of four weeks, after which a bougie No. 13 passed the whole urethra easily. The patient was dismissed as cured on Jan. 21, 1873. He has remained under observation, and is perfectly well.

Case 2164.—*Simple Stricture.*—Dec. 30, 1872 : H. B. S., from Connecticut ; defective history ; has one stricture at two and a half inches, which was restored to a normal state in one seance ; on a subsequent visit was found well.

Case 2165.—*Three Strictures.*—Dec. 30, 1872 : S. J., saloon-keeper, was brought to my office by Dr. Good.

The patient has had strictures for a long time, which resist all dilatation ; are tough, and cause painful micturition with a small stream.

Whalebone *bougie à boule* finds three distinct strictures at two, four and five and a half inches, of a parchment feel.

Galvanism was applied ; the sponge electrode as positive pole was pressed in the iliac region, and a bougie with metallic bulb pushed into the urethra as the negative pole. In six minutes, with the current of fourteen cells, all strictures were overcome. Immediately after the operation, he passed water without pain or difficulty. The stream was full, and larger than he has had for many years. The patient has not been heard from since.

Case 2179.—*Stricture of three years' standing.*—Jan., 1873 : T. G., from Missouri, has a bad stricture at five and a half inches, of three years' standing, caused by a prolonged gonorrhœa.

The treatment was tedious, and was retarded by the patient's imprudence. At last the galvanism absorbed the stricture, so that a

Digitized by Google

sound No. 15 could be introduced easily into the urethra. The patient went home after three months' treatment, and has since reported well.

Case 2192.—*Three Strictures.*—April 16, 1873: G. S. B., from Oneida Co., was sent to me by Dr. Good. *Bougie à boule* discovered three distinct strictures at two and three-quarter inches, at three and three-quarter inches, and at six and a half inches respectively. In withdrawing the small bougie No. 4, it remained engaged in the second stricture, which was decidedly fibrous. Strong fibrous bands held the extremity of the bougie firmly, and to disengage it, it was almost necessary to rupture that stricture to a certain extent.

The electrolytic action was applied as in the other cases, and the bougie No. 8 connected with the negative pole passed slowly through all the strictures in five minutes. The patient reappeared two days afterwards, and reports marked improvement. He says he must return home, and therefore wishes another galvanic application. It is against all rules to repeat such an operation after so brief an interval; but necessity knows no rules. The patient had to go home, and felt so much better after the first operation that he desired a repetition, and promised to return as soon as necessary. Therefore an exception from the rule was made, and the galvanism applied again with an excellent result. The bougie No. 11 passed slowly through all the strictures in four and a half minutes. The patient passed a full stream of water, and felt marked relief. Before his departure home on the next day, he came again to state that he is well, feeling no soreness or fatigue. I heard from him in the fall, and he reported well.

Case 2204.—*Stricture and gleet.*—June, 1873: J. R., saloon-keeper, is near his wedding; has a gonorrhœa, which, under the treatment of a druggist, grew worse; has also an abscess in the glans, near the frenum; has fever and pain in consequence of the inflamed urethra. After subduing the inflammation by internal means, the discharge continues. On examination with *bougie à boule*, a stricture was found at four inches. There was a contraction, a hard, fibrous resistance. Galvanism applied; positive in hand, bougie No. 11 in urethra as negative, soon passed the stricture. Then an injection of water brought by its return a large semi-solid white mass, looking like dead skin thrown off. This was the product of the galvanic action, the real stricture absorbed. It had an alkaline reaction, fibrous in appearance, and looked like the core of a carbuncle. There is no doubt that a former gonorrhœa had caused the stricture, behind which a pouch had formed, which acted as a receptacle, and created

Digitized by Google

a discharge, by which means the stricture grew worse. Now it is natural that no remedies adapted to gonorrhœa or gleet could have stopped the discharge; but the treatment of the stricture cured the gonorrhœa. The patient felt no pain from the operation, and was easier immediately. Two days afterwards a sound No. 12 passed easily into the bladder, and no discharge followed. He married, received afterwards a little treatment, and all went on well. He has been under constant observation, and has remained in good health.

Case 2229.—*Three strictures.*—Sept., 1873: Mr. E. S., New Haven, about twenty years since had a gonorrhœa; was treated only with medicines; had no injections, and finally recovered. Twelve years ago had renal difficulties; passed acid formations from the kidneys, but never passed calculi. Two years ago the stream of water grew smaller by degrees, and sometimes he could not void urine at all. Was treated for stricture, but was not relieved. On examination, the *bougie à boule* encounters three strictures:

First, at three and one-eighth inches, which is overcome by rotating, and directing the points to the anterior wall of the urethra. The bougie is not caught on the return, but slips easily back.

Second, at five and a half inches, from which point the calibre of the urethra remains narrowed until the

Third stricture, at six and a quarter inches, which is only overcome by bending into the curve, and slowly pushing and pressing forward. This last is the worst stricture.

Oct. 3.—Galvanic battery used. A No. 13 bougie, with metal bulb as negative pole, passed through all the strictures in four minutes. The bougie, during the action of electrolysis, was firmly grasped by the strictures, and even by the prostate, and advanced slowly and by degrees into the bladder, so that the full measure of the bougie introduced was ten inches. The battery used was very weak, and therefore twenty cells were in operation. The positive sponge electrode was held in the palm of the hand. The electrolysis was kept up seven minutes in all.

Oct. 21.—Galvanic application repeated as before; nine cells for ten minutes. The bougie No. 15 as negative had scarcely any difficulty, and entered soon through all the strictures.

Oct. 31.—Slight galvanization. Bougie No. 15 entered easily, without detention or pain. The patient passes a large stream of water now. For other ailments he is still under treatment, but the urethra has had no relapse.

More cases could be reported, but as there is a similarity in many,

Digitized by Google

it would be only a repetition of facts. Other cases have been treated recently, and the record would not be so valuable, but I believe the clinical facts here recorded are sufficient basis for the theory elicited in the first part of this paper. And in conclusion I can only repeat that I only recommend the first method as a perfectly safe one; and the success of the electrolysis depends mainly on the chemical decomposition or absorption by mild currents, very gradually increased, and repeated at sufficiently long intervals.

Digitized by Google

ARTICLE VI.

Diagnosis of Eye Diseases. By C. A. ROBERTSON, M.D., M.M.S.S., Member of the American Ophthalmological Society, Ophthalmic and Aural Surgeon at St. Peter's Hospital, Albany, and at the Troy Hospital.

Attempts to elucidate a subject may sometimes confuse rather than enlighten, through excess of learned detail. One may encounter divisions and subdivisions carried to such extent, and these sometimes apparently treated as of equal importance with the subject itself, of which they are components, that he is led to wonder how the exact science of mathematics dare assert that infinitesimals may ever be disregarded, and is amazed with the learning that can—

"Distinguish and divide,
A hair 'twixt south and southwest side."

Then, too, it is by no means unusual for technicalities of expression to multiply in all special studies, until at times they seem to savor more of pedantry and verbiage than of wisdom, and it occasionally appears to an observer as if a ponderous and polysyllabic nomenclature had been devised as barriers and *chevaux de frise* to keep off invaders.

I am far from entertaining a disposition to underrate the value of minute and exhaustive study, or to ignore the convenience and even necessity of employing technicalities of language, and I recognize only the criticism that complains of their superfluity and affectation of learning. It has sometimes been charged against ophthalmology by general practitioners, that its over-laden vocabulary and nomenclature render much of its teaching practically useless to them, since they have not the time to master its terms, and my object in this paper is to give, in as simple language as possible, the most obvious characteristics and symptoms of diseases incident to the eye as an aid to any who may value such assistance in recognizing and distinguishing these ailments. I shall be less particular about names than the things themselves, and I shall omit almost entirely any consideration of causes or treatment of the disordered conditions treated of.

I shall speak first of the *appendages of the eye*, including under

Digitized by Google

this head the lids, mucous textures and lachrymal apparatus, both secretory and excretory. It would be safe to say that fifty *per cent.* of all diseases of the eye will be found in these structures, and fully twenty-five *per cent.* in the lids. The conjunctiva is a mucous membrane lining the lids, and reflected upon the globe, and is subject to inflammations analogous to those of mucous membranes in other localities, such as the linings of the nasal and pharyngeal cavities, the eustachian tubes, drum of the ear, lachrymal passages, etc.

Various terms have been employed to designate *inflammations of the conjunctiva*, as though they were essentially different in kind, and not similar processes in different stages of evolution and extent, or of different degrees of intensity. The most important thing, however, is to recognize that the conjunctiva is the structure assailed, and to bear in mind that the most common features of the foe are the catarrhal, granular and phlyctenular inflammations. Simple inspection on the part of any one versed in medical diagnosis, will detect the hyperæmia of the mucous tunic, the lachrymation, the discharge of mucus, puro-mucus or pus, the intolerance of light, especially in the eruptive condition, and will note the common complaint of a feeling of sand or dust in the eye. It is hardly necessary to dwell in this cursory survey, in order to describe the appearance of *granulations of the lid;* for whoever has everted a lid and once observed the greater or less roughness they present, will not fail to recognize them again. Since the conjunctiva is rather an accessory than an essential tissue of the eye, I have not hesitated to consider its diseases even when on the ball, as affecting an appendage of the eye. The general reticulated redness of the conjunctiva, more marked away from the cornea than near it, and movable as the conjunctiva is made to glide to and fro over the sclerotic, is a distinctive feature of simple conjunctivitis, while the little mesh of vessels, not unlike the tail of a comet, with a small eruption as a nuclear body is sufficiently characteristic of phlyctenula.

I shall pass over with mere mention *tumors of the lids* or in the *orbits*, *adhesions of the lids* to each other or to the eye-ball, *cellulitis*, *styes*, *abnormal turning* of the lid inward or outward, *drooping* of the lid or *cuticular diseases* affecting it, *malposition* and *maldirection of the eyelashes*, for they are sufficiently evident for assured diagnosis.

There is, however, a very annoying and frequent affection of the lids, called variously *blepharitis*, *ophthalmia tarsi*, *tinea ciliaris*, which demands some consideration. A correct diagnosis of this disease, which affects the free borders of the lids, is the more im-

Digitized by Google

portant since it is usually quite amenable to treatment when seasonably dealt with if neglected or injudiciously treated, it entails chronic weakness and irritability of the eyes that hinder their comfortable use, and it often produces deformity of the lids, in consequence of structural changes. It may produce atrophy of the meibomian glands and ciliary follicles, or instead of the destruction of the lashes, it may cause them to grow irregularly, so that instead of protecting the eye from admission of foreign bodies, they, themselves, turn in upon the eye, and behave as foreign bodies, causing protracted inflammation and impairment of sight. The rounded edges of the lids, that result from the destruction of ciliary glands and follicles, do not conduct the tears away normally, and the eyes become watery with an overflow running down the cheeks. In fact, either as cause or accompaniment, alterations in the lachrymal passages are frequently found with blepharitis. The contractions of the borders of the lids, effected by the disease, may also occasion ectropion or entropion.

This affection should not be confounded, as sometimes happens, with inflammation of the conjunctiva. The redness and thickening of the lid is confined to the free border, and the little pustules, ulcers, mucosities, scales and excoriations there situated, are unmistakable and pathognomonic.

The *lachrymal apparatus* is liable to disturbance in a variety of ways. Direct inflammation of the lachrymal gland is not a common complaint; but when it does occur, the anatomical position of the seat of pain, and the swelling, will sufficiently indicate the nature of the trouble.

Watery eyes, the result of excessive secretion of tears, or of obstruction of the excreting passages, most usually the latter, are frequently met with. As the plethora of water in the eyes is to be regarded as evidence of disordered conditions, rather than disease itself, I will merely mention that the causes of excessive lachrymal secretion, or epiphora, are usually inflammatory action in the eye, or irritation provoked by the presence of a foreign body, or it may be due to disturbance of the stomach, particularly that produced by habitual excess in the employment of alcoholic drinks. The flooding of the eye called stillicidium, is a sign of obstruction either at the openings of the canaliculi, within their tracts, in the sac or nasal duct, or it may be found that the puncta are not in such apposition to the globe as to permit the admission of the tears. The obstruc-

Digitized by Google

tion may be due to constriction of the lachrymal passages, a turgid state of their linings, or the presence of inflammatory products.

Inflammation of the tear-sac is of frequent occurrence, both acute and chronic. The sac distended with mucus or puro-mucus, presents the appearance of a tumor at the inner corner of the eye. This tumor may be frequently made to disappear by pressure of the finger, which causes the contents of the sac to flow out, and most frequently through the upper punctum. Erysipelatous inflammation of the lids may be confounded hastily with acute inflammation of the sac accompanied by extensive tumefaction of the neighboring parts.

The *lachrymal sac is sometimes distended* by collection of mucus, making an irreducible hard tumor, which may last for years unattended by inflammation, and creating no other annoyance than that of a watery eye and a deformity.

Passing to the *sclerotic coat* of the ball, it may be dismissed with the observation, that it is singularly exempt from idiopathic disease.

The cornea, on the other hand, is specially liable to morbid conditions. Maladies of this structure become of peculiar importance and interest, not only on account of the part which it plays as one of the protective and formative tunics of the eye, but also because lesions interfering with the regularity of its refraction, or with its transparency, effect inevitable deterioration of vision anywhere within the limits of slight impairment of sight and absolute blindness.

As the cornea is so distinctly in view, most of its ailments may be detected by simple inspection when the day-light is permitted to fall directly upon the patient's eye, for then any roughness or irregularity of the corneal surface will cause indefiniteness or distortion of the image which it reflects.

The *inflammations of the cornea* have been variously designated, sometimes anatomically as external, parenchymatous, or interstitial and internal; sometimes from pathological conditions as phlyctenular, vascular, diffuse, punctate, suppurative, neuro-paralytic, nebulous and cicatricial; sometimes ætiologically as idiopathic, scrofulous, syphilitic and traumatic.

A very *peculiar and rapidly destructive form of ulceration* is met with, which originates at the margin of the cornea. Its first appearance is that of a slight sulcus, with upright edges. The bottom of the ulcer is grayish. Injection speedily takes places around the cornea, and as the rapidly developing ulceration makes progress, the cor-

Digitized by Google

nea shows a serous infiltration. In a few days, unless arrested in its course, the ulcer will perforate the cornea, and protrusion of the iris occur, or a general sloughing of the cornea may ensue.

The characteristics of acute inflammation of the cornea are a slight degree of circumferential hyperæmia, circumorbital pain, intolerance of light and lachrymation. In children of a strumous cachexia, the scalding tears and intolerance of light are peculiarly marked.

Mr. Hutchinson, of England, has called attention to a remarkable conformation of the incisor teeth of the second dentition of subjects of diffuse corneitis, which he regards as indicative of a *syphilitic diathesis.* The free extremities are viciously narrowed or peg-shaped, with a crescentic notch.

Slight opacities or cloudiness of the cornea may escape notice when the unaided vision is employed in examination, but if the light of a candle or gas, placed at a little distance from the patient's temple, be concentrated through a strong convex lens, and fall on the cornea, the slightest nebula may be detected, particularly if a strong lens be held before the eye as a magnifier. This method of examination by lateral illumination, as it is termed, is serviceable for detecting corneal irregularities, foreign bodies lodged in the iris, and changes within the eye.

Malposition of the eye is readily observable on inspection, unless it be in the slighter degrees, when special means of detection will be found necessary. Sometimes the entire globe is thrust forward by orbital cellulitis or tumors within the orbit, and at other times the protrusion is due to muscular paralysis, or formed as a concomitant of enlargement of the thyroid gland and cardiac disease. The ball may be deviated so that the visual line is misdirected laterally, upwardly or downwardly. The inward deviation, or convergent squint, is the most common. In squint some anomaly of refraction will be found. The mobility of the globe is not greatly impeded by squint, as happens when the deviation of the visual line is due to muscular paralysis.

Besides the constant deviations of the globes just alluded to, there is also to be noted at times a peculiar tremulous and rapid movement of the eyes, sometimes rotary, but generally in a lateral direction, called *nystagmus.* This involuntary ocular action is developed in infancy, and is rarely found with a perfect state of vision.

We now arrive at the diagnosis of *disorders affecting the internal*

Digitized by Google

structures of the eye, and of these the first to be considered are maladies of the iris.

Inflammations of the iris have been classified, ætiologically, as rheumatic, arthritic, scrofulous, syphilitic, traumatic and sympathetic. A convenient division of iritis into acute and chronic, without regard to cause, may also be made.

The characteristics of *iritis* are fine, straight, radiated vessels surrounding the cornea; a discoloration of the iris causing a blue eye to become greenish, and a brown eye reddish; an irregularly contracted and immovable pupil; effusion of coagulable lymph into the pupil and behind the iris, with adhesion of its pupilary edges or posterior surface to the capsule of the lens; tubercles, pustules or abscess of the iris; opacity of the lens or capsule; dimness or entire loss of sight, and pain in and around the eye, especially at night. Although every one of the features may not be uniformly met with, enough of them will be observed to mark the disease. In acute iritis there is almost always some concomitant hyperæmia of the conjunctiva, and, unfortunately, this has at times misled practitioners and influenced them consequently to employ injudicious and even harmful measures in treatment.

Chronic iritis is sometimes very insidious in its access and course, and great impairment of sight or even blindness may follow, without pain being felt or special redness observed. The loss of sight may not be known perhaps until the patient discovers it accidentally by shutting the sound eye. Examination by lateral illumination will be found very useful in suspected chronic iritis.

Sympathetic iritis is a formidable malady, and it is of vital importance to vision to detect the first symptoms of its invasion of a sound eye, when its fellow has suffered traumatic injury; for time lost in instituting proper treatment of this most intractable disease, is an irreparable loss for the patient.

Syphilitic iritis is a common affection. Its accompanying hyperæmia is usually well marked, and deposits or tubercles of lymph commonly seen in the substance, or along the pupillary edge of the iris. The turbidity of the pupil is very noticeable, and in most cases other evidences of a syphilitic dyscrasia will be found.

In a natural sequence, consideration of *choroidal ailments* follows that of iritis. In the pathology of internal diseases of the eye, choroidal disease occupies an important place, both on account of its frequency, and on account of the malign influence exercised by it on neighboring textures, particularly the retina and vitreous body.

Digitized by Google

Maladies of the choroid may be generalized, like those of the iris, as acute and chronic; but they are also by refinement distinguished as congestive, vascular, exsudative, suppurative, atrophic disseminated, general, syphilitic and serous. Inflammations of both the iris and choroid at the same time are common, and designated as irido-choroiditis. The choroid is sometimes detached from the sclerotic at the optic nerve entrance as an effect of excessive tension in progressive near-sight, constituting an affection called sclero-choroiditis, or posterior staphyloma.

Acute choroiditis or irido-choroiditis begins with a sense of stiffness and fullness of the eye, accompanied with violent throbbing and lancinating pain, especially at night, not merely in the eye-ball, but in the whole side of the head. The globe is so tender that it cannot bear the slightest touch. Flashes of light, lachrymation and extreme photophobia are complained of. If the eye permits examination, it is found less reddened than one would have supposed, and the white of the eye looks a dirty yellow. The cornea is hazy, often slightly rough and surrounded by a bluish ring, where it is overlapped by the sclerotic. The pupil becomes irregular, dilated and motionless, and the iris assumes a slate color. The sight may be totally abolished in a few hours, or grow dull and misty, with final loss of sensibility of the retina after a few days. A good deal of constitutional disturbance attends acute choroiditis, especially when suppuration takes place.

The symptoms of *chronic choroiditis* are evolved slowly and insidiously. The perception of colored spectra, of whirling and undulating light, and dimness of vision with pain in and over the eye, compose its warning procession of symptoms.

In order to detect the changes in the appearance of the choroid which occur in chronic choroiditis, examination of the illuminated interior of the eye by means of the *ophthalmoscope* is indispensable. While this highly prized instrument has cleared the way for great and even wonderful advancement of ophthalmology in certain directions, and affords always an intellectual gratification to the observer in disclosing the condition of the interior of the eye in health and in many of its morbid states, the medical practitioner, who has not familiarized himself with the use of the instrument, will feel a satisfaction in knowing that even the most skillful are almost without resource for the curative treatment of simple chronic choroiditis, whatever appearances they may observe—such as collections of pigment, spots of exsudation, of hæmorrhage or atrophy.

Digitized by Google

An exception to this statement must be made, however, in cases of choroiditis from constitutional syphilis, in its earlier stages.

Glaucoma is an internal disease of the eye, of which the chief characteristic is an increased hardness of the eye-ball, that may be detected and its degrees appreciated by palpation with the fingers. It presupposes a rigidity and tension of the sclerotic, whatever may be the exciting cause of the disease; as, for instance, ciliary neurosis causing excess of vitreous substance, serous choroiditis, or external injury. As the rigidity of the sclerotic tunic increases with age, it follows that glaucoma is usually a disease of those who have passed the middle period of life. Its characteristics are, in addition to hardness of the ball, a shallow anterior chamber, dilated and sluggish or immovable pupil, insensibility of the cornea and dullness of its surface, cloudiness of the vitreous and dimness of vision. On examining the fundus of the eye, a depression of the optic nerve disc is seen, with an apparently interrupted continuation of the retinal vessels, where they emerge from the cup-like hollow, and in their course bend over its edges. A beaded appearance of the tortuous and enlarged retinal veins, with arterial pulsation on pressure with the finger, are other ophthalmoscopic features.

Glaucoma may be acute or chronic. *Acute* glaucoma is ushered in by severe pain in the eye and around it, which, from its intense lancinating character, has been mistaken for neuralgia. Flashes of light and iridescent vision accompany the pain. The sight may be entirely destroyed by the attack or the disease, if not arrested by surgical measures, remit to recur again until the sight is at last obliterated. The *chronic* variety may present no inflammatory signs, and insidiously complete its destructive work without pain.

Retinitis and *neuritis* are inflammations of allied textures, and may be spoken of together at this time. In fact they are apt to be concomitant, and then termed *neuro-retinitis*

Serious as these affections are, they offer to the practitioner but little in the way of objective signs, unless aided by the ophthalmoscope. These tissues, not having general sensation, do not indicate inflammatory action by pain, and the chief subjective symptoms are clouded vision, colored mists, and fixed dark spots. If the choroid becomes involved in the disease, as often happens, there may be acute suffering.

The principal forms of retinitis are the *albuminous* or *nephritic* (found with Bright's disease), and *syphilitic*. Hæmorrhagic retinitis, coming on suddenly from intra-ocular hæmorrhage or cerebral

Digitized by Google

congestion, anemic retinitis from embolism of the central artery of the retina, or branches of it, coincident with organic disease of the heart, and pigmented retinitis, an affection of childhood, sometimes regarded as due to consanguinity of parentage, are all interesting varieties. It is, however, impossible to distinguish their peculiar appearances within the eye, except by aid of the ophthalmoscope, and therefore they will not be described in this paper, for those who are familiar with the instrument will recognize them at a glance. For the same reason I shall pass over the ophthalmoscopic appearances of the optic nerve disc, whether caused by inflammation originating in the eye and tending upwards to the brain, or having its point of departure in the brain or nerve tract, and descending to the eye.

The only remaining ailments of the eye which I purpose to consider in this connection, are of the *crystalline lens* and the *ciliary muscle.*

The lens may be dislocated by violence, its capsule being ruptured, and it may then be found lying between the iris and cornea, or seen floating in the dissolved vitreous humor, or the choroid and sclerotic tunics, as well as the capsule being rent, the dislocated lens may be discovered lying under the conjunctiva.

The lens or its capsule may become opaque, and then a *cataract* is said to exist, called a capsular cataract in the former case, and lenticular in the latter. Sometimes an opacity called a *false cataract* occupies the pupillary space, caused by the presence of coagulable lymph, blood, pus or pigmentary matter.

True, lenticular cataract is due to atrophy of the lens, and it is a subject of special interest on account of the brilliant results attending success of the very delicate operations devised for its cure. Various methods of operating for the removal of lenticular cataract have been proposed, and are defended with conflicting earnestness, but it would be foreign to my purpose to discuss them here.

A patient with cataract, notices a diffused haziness at first, which gradually thickens until all useful vision is finally gone. His lateral vision is generally better than his direct, and he sees more clearly at twilight when the pupil dilates, than when it is contracted by the bright sunlight. Not unfrequently cataractous patients see with one eye a single object multiplied. The aspect and gait of a person with cataract are characteristic, and indicate a definite purpose of utilizing to the best advantage what little sight remains. The degenerated lens may often be distinctly seen with the naked

Digitized by Google

eye; but in early stages of cataract the commencing opacity is best detected by dilating the pupil with atropia, and examining the crystalline with lateral illumination and convex lenses. I shall not dwell longer on the subject of cataract, but pass it with the simple remark, that while different varieties have been described, the most important divisions to note are the hard and soft cataracts, the former being senile affections, and the latter those of earlier life.

It only remains for me now to set forth and describe with brevity the *optical disorders* of the eye. There are six of these in all, three of them due to errors of refraction, which are organic, and three to abnormalities of accommodation, which are functional. The anomalies of refraction are myopia, hypermetropia, and astigmatism; those of accommodation are presbyopia, paralysis and spasm of the ciliary muscle.

For the ready understanding of the subject, permit me to state what is a demonstrated fact, that all degrees of refraction which an eye can command to accommodate the vision for different distances, are dependent on alterations in the convexity of the crystalline lens. The *ciliary muscle* of the eye is the effective agent for producing these alterations. Now, when the eye is in a state of perfect repose, the crystalline lens is in a condition of lowest refraction, and parallel rays of light entering the pupil will be conveyed to a focus precisely on the retina, and there form an optical image, provided the organ be normal in its proportions. Rays of light coming from a point at a considerable distance and entering the pupil, are so slightly divergent, that they may be regarded as virtually parallel.

Should the antero-posterior diameter of the eye be too long, that is, longer than in the normal eye, it is clear that the focus of parallel rays would fall short of the retina, and be formed in the vitreous in front of it, and consequently the vision must be defective. This is the case with the myopic eye. *Myopia* may readily be detected by the improvement produced by putting a suitable concave glass in front of the eye. Such a glass will render the parallel rays divergent before they enter the pupil, and as the focus of divergent rays is situated at a greater distance from a convex lens than that of parallel rays, the divergent rays produced by the concave glass will be brought to a focus at a greater distance from the crystalline lens, and may then form an image on the retina. Accordingly we say, that a myopic eye is accommodated for divergent rays.

Hypermetropia is a refractive anomaly, exactly the reverse of myopia. In the hypermetropic eye, the antero-posterior diameter

Digitized by Google

is shorter than in the normal eye, and consequently parallel rays of light admitted into it are not converged to a focus on the retina, since the virtual focal point is beyond the boundary of the eye. Therefore no distinct image can be formed, and the vision in a state of rest must be imperfect. In order to converge the parallel rays to a point on the retina, the hypermetrope shortens the focal distance of the crystalline lens by increasing its convexity. This effort necessitates, however, the abandonment of the state of repose, which the normal eye enjoys when accommodated for distance. The ciliary muscle of a hypermetropic eye must, therefore, during waking hours, be subjected to constant and wearying tension at all times, and when near objects are regarded, the tension must be still more increased to enable the crystalline to converge divergent rays to a focus on the retina. By consequence, weak sight or practical inability to use the eyes for any considerable length of time is developed, as the muscular energy becomes exhausted. If, however, the parallel rays are rendered convergent before entering the pupil by interposing a convex lens, equal in refractive power to the extraordinary degree of convexity which the crystalline was compelled to assume, in order to focalize parallel rays, then the hypermetropic eye may enjoy a state of repose when regarding distant objects, and exercise active accommodation only when looking at near objects, in the same manner as a normal eye. It follows, then, that a hypermetropic eye is one accommodated for convergent rays; and the improvement of vision when looking at a distance through a convex glass, is a proof of hypermetropia.

In order to ascertain the full degree of hypermetropia in any case, it is customary to reduce the crystalline to its lowest refractive by relaxing the tension of the ciliary muscle with a strong solution of atropia dropped into the eye. This is requisite, since the habitual strain of the muscle becomes so fixed in most cases, that it is not readily, in fact, cannot be completely suspended at will, even when the use of a convex glass obviates the necessity of extraordinary refractive curvature of the crystalline.

We have seen that myopia and hypermetropia are opposite conditions; that in the former the focal point of parallel rays is in front of the retina, and in the latter that the retina is in front of the virtual focus. These refractive lesions are due, as stated above, to excess or deficiency of the antero-posterior length of the eye-ball. But an efficient cause of the same results would be found in excess or deficiency of curvature of the refractive surfaces of the optic

Digitized by Google

media. Now, in order to produce a well defined optical image with a lens at any point, it is indispensable that the curvature of its surface should be uniform in every meridian. If one meridian represents the arc of a greater or smaller circle than another, it is clear that similar rays of light in the plane of that meridian will not be refracted to a focus at the same distance as those in the plane of a different meridional curve. Consequently such a lens will not possess an identical focus for all rays, and may be termed a focusless, or, using the Greek derivative, an astigmatic lens. Applying this reasoning to the eye, and taking cognizance, for the occasion, of the cornea only, we shall readily understand that an astigmatic eye may be defined as one in which the curvature of the cornea varies in different meridians, and is therefore focusless, and must produce distorted image on the retina, even though its refractive power be normal in the plane of some of its curvatures. Lenticular astigmation also exists.

In order to detect *astigmatism*, let the patient look with one eye at a time at a set of right lines, running at angles with each other, like the spokes of a wheel. If simple astigmatism exists, the lines in some one direction will appear more clear and distinct than in other directions. Astigmatism is apt to be found in hypermetropia, and not unfrequently complicated with myopia. If any meridian of an astigmatic eye is interrupted in the regularity of its curvature, the astigmatism is termed irregular.

In considering the functional anomalies of vision, we must bear in mind what has been stated above, that the normal eye when in a state of rest is accommodated for parallel rays, that is, for seeing distant objects. When looking at near objects, as, for instance, the letters in a book at a distance of ten or twelve inches, the rays of light when entering the eye are no longer virtually parallel, but represent manifestly diverging cones of rays, of which the points of departure are the apexes, and the pupillary space the base. In order to bring these diverging rays to a focus at the fixed distance where parallel rays meet, that is, on the retina, a greater refractive power is obviously needed, and this is afforded by an increased convexity of the crystalline lens; in other words, accommodation for a near point. This wonderful and beautiful play of accommodation for distant and near vision may be disturbed by *paralysis or spasm* of the ciliary muscle. *Paralysis* of this muscle may be produced artificially by belladonna and other so-called mydriatics. Its character-

Digitized by Google

istics are dilatation of the pupil, and inability to accommodate for near objects, which consequently seem blurred.

Spasm of the ciliary muscle causes the pupil to become strongly contracted, the lens to be increased in convexity, and while the near point of vision is maintained there is an inability to accommodate for parallel rays, and vision for distance is rendered indistinct.

Presbyopia is, as the name indicates, an affection of eyes that are no longer young. In childhood, the play of the ciliary muscle and the resistance of the crystalline lens are nicely balanced, and the lens may be rendered so convex that it will accommodate for distinct vision at two inches distance; but year by year this near point recedes as the crystalline become more and more consolidated and resistant to the efforts of the ciliary muscle put forth for increasing its convexity, in order that the vision may be accommodated for small objects, like letters or stitches, that obtend the angle of vision at ten or twelve inches distance. In very advanced age, another factor of presbyopia presents itself, namely, the senile enfeeblement of the ciliary muscle.

When reading or writing becomes irksome, or impossible at ordinary distances, the dim-sighted, presbyopic eye is only too glad to supplement its accommodation artificially, and regain distinct near vision by bestriding the nose with a pair of spectacles. The convex glasses that aid the vision are not only a means of correction of the presbyopia, but an evidence of its existence.

Digitized by Google

ARTICLE VII.

Three cases of Perineal Lithotripsy.
By E. KRACKOWIZER, M. D., New York.

When listening to the paper on perineal lithotripsy, read by Dr. J. W. S. Gouley, before the State Medical Society last year, I resolved to test this method in the first case of vesical stone with which I might meet.

It differs and is superior to median lithotomy, so-called, mainly for two reasons: First, in that it dilates the wound track, the prostatic portion and the neck of the bladder in a more gentle and gradual manner than it is possible to do with the finger; and second, in that it renounces beforehand the attempt of extracting a stone beyond the diameter of three-quarters of an inch, considering that the track established by median lithotomy cannot be stretched safely beyond the diameter of one inch, without exposing the patient to the immediate and subsequent dangers of tearing and contusing the parts which constitute the way for extracting the stone.

I have to report three cases, in all of which I had the advice and assistance of Dr. Gouley, and in which I used the instruments kindly loaned by him, adhering strictly to the rules laid down by Dolbeau, with the exception that the incision in the membranous portion was made by at once plunging the knife boldly down to the groove of the staff, and making the incision larger than Dolbeau does himself.

First case.—G. M., 64 years of age, watchmaker, had rational symptoms of stone in the bladder for about eight years. The stone was first detected by Dr. Geo. M. Schweig, of New York, who called me in consultation, in April, 1873. The patient was chloroformed, the bladder extended by injection of warm water, a lithotrite was introduced, and the stone was grasped several times with a view to make out its size. The largest diameter showed 45 mm., the smallest 40 mm., corresponding to very nearly $1\frac{12}{16}$ and $1\frac{10}{16}$ inches. When the stone had been grasped for the last time, the beak of the instrument was turned toward the fundus of the bladder, and while elevating the handle of the instrument, pushed strongly backward and downward, so that the finger introduced in the rectum could make out the contour of the stone with absolute

Digitized by Google

exactitude. This exploration confirmed what the measuring by the lithotrite had already taught, namely, the presence of an almost round, tolerably smooth stone. The prostate gland was found moderately enlarged. The detritus adherent to the branches of the lithotrite left no doubt that, at least as far as the surface was concerned, it was a phosphatic calculus.

Although the patient was well nourished, and although the local functional disturbance was not of an excessive kind, yet he was feeble and he looked pale, so that it was thought advisable to subject him to a tonic regimen for a couple of weeks, before the operation should be made.

The operation was performed May 20, 1873. After dilating the track in the manner described by Dr. Gouley in his paper, the stone was reduced to fragments partly by Dolbeau's, partly by Gouley's lithoclasts, and these fragments and the debris extracted. To do this it was necessary to introduce the instruments very often. The hæmorrhage was insignificant. The fragments and debris weighed 1 oz. and 24 grains.

For an hour or two after the operation the patient felt chilly. Ten grains of quinine were administered at once, and a suppository of opium was given. With this exception, and a few five grain doses of quinia, no medication was used.

There was hardly any febrile movement, the pulse never exceeding 100, nor the temperature more than 99° and a fraction. The patient had control over the sphincter of the bladder during the first twenty-four hours after the operation, although the nisus occurred very frequently. These intervals between micturitions became longer and longer, until at the end of five days he could hold the urine from four to five hours. Already the next day after the operation part of the urine passed through the meatus, and from the fifth day by far the largest part of it was discharged through the natural channel, only a few drops oozing through the wound during the act of passing water.

On the eleventh day after the operation, the patient was permitted to rise and move around the room. The fourteenth day after the operation I found the old man sitting at his workbench. There was only some superficial suppuration at the wound. Ten days later it was completely closed.

Dr. Schweig who was most assiduous in carrying on the after treatment, and who took very full memoranda of the case, injected the bladder, June 6, seventeen days after the operation, and sounded

Digitized by Google

it. Not a trace of debris could be detected with the sound, nor did any come away while patient voided the bladder of the injected water.

The sexual power which had been quite dormant during his sufferings returned after a few months, and in every other respect the health of Mr. M. has been excellent to this very day.

Second case.—A rhachitic boy, A. P., three years of age, had wetted his bed during sleep as long as he lived. Had suffered from acute rheumatism not quite one year ago, which left him with insufficiency of the mitral valve. Rational symptoms of stone in the bladder developed soon after, but were judged to be merely an aggravation of the enuresis, which, in turn, was supposed by one physician to be caused by a too narrow prepuce. He incised it without affording any relief. Dr. L. Conrad saw the child, and on examination with the sound detected a stone in the bladder. He invited me to see the patient, and by repeating the examination I corroborated his diagnosis. An examination per rectum revealed the size of the stone in all diameters to be about three-fourths of an inch.

June 3, 1873, Dolbeau's operation was performed. The dilitation was made with Dolbeau's dilator very slowly and cautiously, but finally the instrument was expanded to its full limit. Gouley's forceps for fragmentation of stone was used, by which the stone was broken up in several small fragments and a powder, which partly with this forceps, partly with a slender stone forceps, were removed. Bleeding very little; the stone was a phosphatic one, its weight about two drachms.

There was no reaction; in fact the child had since several months not had so much uninterrupted sleep as the night following the operation. The partial passage of urine through the whole length of the uretha did not occur before the fourth day after the operation, and it was fully two weeks before the whole urine came through the natural channel. At what time precisely after the operation the child gained control over the sphincter of the bladder, I did not succeed in making out, partly through inattention of the parents, partly because the habit of wetting himself complicated the case. When I last heard of the child, about three months ago, it was free from all urinary trouble, but the enuresis persisted as much as ever.

Some time ago Dr. Gouley informed me that he thought the mode of dilating the track for the extraction of vesical stone could be improved; that for Dolbeau's dilator a better instrument could

Digitized by Google

be substituted; that he was experimenting to perfect such a substitute. I show it here. It consists of a gum elastic catheter, around which at some distance from its vesical as well as outer extremity a loose india-rubber bag is fixed, which can be filled with water through a small feeding tube attached to its lower end. I promised that I would try it in the next case of vesical calculus.

Soon after my attention was called to Dr. W. Molesworth's so-called clymax dilator, which, without doubt, is superior to Gouley's instrument, because the former's tubes, requisite to dilate the track in perineal lithotripsy can be very easily introduced by the guidance of the staff in the bladder, whereas in Gouley's the collapsed bag, forming as it were two lateral wings, which cannot be easily managed, obstructs the progress of the instrument in the track. Besides the walls of the bag are too delicate, and even if expanded by injected water would hardly have force enough to overcome the resistance of the prostate and the sphincter vesicæ, which would rather constrict the dilator, giving it an hour-glass shape.

On the contrary, in Molesworth's dilator the wall of the india-rubber tube is made very strong, and it requires considerable force to overcome its resistance and to fill it by degrees. The powerful condition of its walls is best seen by opening the stop-cock after its distension, the water being thrown back with considerable force. A case for trying the proposed modification soon occurred.

Third case.—P. W., some 40 years of age, was laboring from chronic enteritis and colliquative diarrhœa. He entered the German Hospital in the city of New York during the summer of 1873, in a state of extreme exhaustion, having hardly any command of his stools, so that he had to pass sometimes many hours on the bedpan, he not knowing when a passage was coming from him, or if knowing, not being able to leave the bed to check its running from him. By careful nursing and treatment he improved by degrees, so much that he could sit up again; that his appetite returned somewhat; that the number of his stools was reduced to four or five in 24 hours, and that they gained somewhat in consistence, although never assuming a solid condition.

About the end of October, 1873, he complained of a more frequent desire to pass urine, that the act was painful, and that the urinary tenesmus continued sometime afterward. These troubles increasing, the house physician explored the bladder with the sound, and he detected the presence of a stone. The patient was imme-

Digitized by Google

diately transferred to the surgical ward in which I happened to be on duty. After a few days' rest I repeated the examination, and found the house physician's diagnosis correct. The diameter of the stone as grasped with the lithotrite, was 45 mm, about $1\frac{3}{4}$ inches. On touching, per rectum, in the manner described in the first case, it was found that the stone was quite round, all its diameters being equal.

The next few days of rest were devoted to a careful and repeated examination of the urine. Besides some mucus it contained albumen, and in no specimen looked at through the microscope were there wanting a large number of fibrinous casts, showing that not merely the excretory portion, but even the secretory one of the urinary organs was gravely diseased.

January 13, 1874, I proceeded to subject this most unpromising case to the operation of perineal lithotripsy.

Patient was etherized, and after the opening of the membranous portion, an ineffectual attempt was made to introduce Gouley's dilator. I substituted Molesworth's, taking tube No. 2, which allows an expansion of one inch diameter. It was withdrawn, while still dilated to its full extent, and it was beautiful to see as it emerged by degrees from the perineal wound, how inconsiderably wider the part liberated from its constriction bulged out, than the one still retained. The finger could be at once introduced through the track in the bladder. Some little delay occurred in getting hold of the stone, but after it once was grasped, it broke up with the greatest ease in a few small fragments and a large amount of dust, all of which were removed by repeated introductions of a slender, common stone forceps.

The stone was a uric calculus, and weighed nearly one ounce.

There was hardly any bleeding.

My fear that in an individual so utterly broken down by chronic diarrhœa, with kidneys so much disorganized, the reaction might usher in a suppression of urinary secretion and uræmia, was happily not realized. On the contrary, he bore the operation uncommonly well. The same evening, after the operation, he was conscious that he had some control over his bladder, although he was obliged to expel small quantities of urine every half hour; next day these intervals lengthened. On the third day a few drops of urine appeared on the meatus, and forty-two hours after the operation, he could hold his water for five hours. On this plane he remained for several days; but then his diarrhœa recurred with the old force

Digitized by Google

again, and while his liquid stools pass from him without his hardly being aware of them, so he is many times not able to say whether the urine passes involuntarily with the stools or not. With all that, the wound has a good aspect, and two days before I came away, it looked as if the diarrhœa had been brought again somewhat under control, and he was again able to hold the urine for an hour or so at his will. There is not quite unreasonable prospect that the wound may heal up, and the urine be discharged through its natural channel, although sooner or later he must succumb to the trouble from which he has suffered for years.

Digitized by Google

ARTICLE VIII.

Report of two cases of Inversion of the Uterus, read before the Medical Society of the State of New York, Feb. 3, 1874, by JAMES P. WHITE, M.D., Professor of Obstetrics, in the Medical Department of the University of Buffalo.

It will be remembered by the members of this Society, that at a recent meeting* two cases of successful reduction of chronic inversion of the uterus (being the eighth and ninth) were reported, with a description of an instrument designed to aid in the performance of the operation. Since that time two additional cases have fallen under my observation, and have also been successfully reposited.

Although no new principles are advanced in this report differing from the views already published—first, in 1856,† and then in 1858‡—and at various subsequent times, as occasion has been afforded for reporting these operations; yet, it is believed, that the operation is not yet sufficiently established as a "standard operation," to render uninteresting the confirmatory evidence of other cases. The tenth case, given below, will do much to establish the correctness of the opinion advanced in 1858, "that well directed pressure upon the fundus, if continued long enough, will, in all cases where there are no adhesions, result in restoration or reposition; no matter how much time may have elapsed since inversion occurred." And, again, in my report of the cases to this Society in February, 1872, the following sentence appears: "I am of opinion that *all* cases of inversion *can* be reduced without qualification as to their duration." That this position will, in the opinion of all unprejudiced gynæcologists, be established by the following cases, in addition to those already reported, is believed, and the question of reduction in all instances will thus be placed beyond controversy in the minds of all men of progress.

Case 10.—In the winter of 1871–2, I received a letter from Dr. O. C. Strong, of Colden, informing me that there was in his neighborhood a case of inversion of more than twenty years' duration.

* Reported Feb. 1872, and published in the proceedings of that year, and in the April number of the American Journal of the Medical Sciences, with a plate of the repositor.

† In the Buffalo Medical Journal, April, 1856.

‡ In the American Journal of the Medical Sciences, July, 1858.

Digitized by Google

The Doctor had been called in to prescribe for her during one of the attacks of flowing, from which she had suffered ever since the birth of her child, now twenty years old. Not content with the assertion that she was "bleeding to death," and seeing her exsanguine and feeble condition, the Doctor resolved, if possible, to ascertain the cause of the hæmorrhage, before undertaking to prescribe a remedy. Upon instituting a careful digital examination, he recognized what no one who had preceded him in the treatment had ever suspected—complete inversion of the uterus. He soon after wrote me on the subject, asking whether I would be willing to undertake its reduction, etc. Considerable time elapsed before the patient could be made to believe that there was any hope of her relief from a malady which had prostrated her for more than twenty years. At length, through the persuasion of her physician, Dr. Strong, she was induced to invite me to undertake its reduction. The case was reported by A. T. Livingston, M.D., assistant physician in the New York State Lunatic Asylum, in Utica, and from his notes I make the following extracts:

Buffalo Medical Journal, August, 1872.

The reduction of an inverted uterus, except immediately after the accident, is one of the most recent results of obstetric surgery. Not merely the propriety, but even the possibility of its accomplishment has been generally denied by authors up to the present time.

The fallacy of this doctrine has again been beautifully demonstrated by Professor James P. White, M.D., of this city (Buffalo), in the reduction of a complete inversion of the uterus of twenty-two years' standing. To Professor White is due the credit of originating this operation, which he did so long ago as 1856, when he reduced a case of eight days' duration. In connection with a report of this case, published in the Buffalo Medical Journal, for March, 1856; again, in the report of his third case, published in the American Journal of the Medical Sciences for July, 1858, Professor White expressed the most sanguine convictions as to the feasibility of reposition in cases of long duration. There is absolutely nothing wanting in this latest, the tenth case, operated upon by Dr. White, to entirely establish the truth of these convictions. This case, of which we give an account below, is considered to be the most remarkable one on record, particularly in point of time, which it clearly proves is not a condition which negatives the success of the operation.

Digitized by Google

The history of the patient, prior to the time of the operation, has been obtained principally from a thesis presented to the faculty of the Buffalo Medical College, in February, 1871, by Dr. O. C. Strong, of Colden, N. Y. Mrs. Amé Dubois, then aged twenty-four, and residing in Buffalo, gave birth to a female child, July 15, 1850. The midwife who attended her in her confinement, experienced some difficulty in the removal of the placenta, but finally succeeded in *pulling it away*. This act was followed by so great hemorrhage as nearly to destroy the woman's life. From this time until the day of the operation she suffered a continual loss of blood, which twice a month amounted to a flooding. She consulted various physicians in relation to her condition, but received no benefit from any of them. This is not surprising when we are told that, until Dr. Strong was called to see her in 1870, no physician had ever proposed to make an examination per vaginam with the view of determining the cause of the hemorrhage.

March 2, 1870, Dr. Strong was called to attend Mrs. Dubois. He found her lying upon a bed, about which were evidences in abundance of the terrible flooding which had just occurred. Upon making a digital examination, he discovered a tumor about the size and shape of a small pear occupying the vagina, which, after a careful specular examination, he diagnosed as an inverted uterus. For this prompt and, as the sequel has shown, accurate diagnosis, Dr. Strong deserves much credit. He informed his patient that he considered her condition susceptible only of palliative measures, and advised the use of tonics and local astringents.

Afterwards learning of Dr. White's previous successful operations for chronic inversion of the uterus, a correspondence arose between himself and the latter, with reference to the case of Mrs. D., which resulted in an invitation to Dr. White to visit the patient, and, if upon examination he should think it advisable, to attempt the reduction of her uterus.

June 23, 1872, Prof. White, with Profs. Julius F. Miner and M. G. Potter, Drs. Geo. N. Burwell, W. C. Phelps, and the writer, whom he kindly invited to accompany him, proceeded to the residence of the patient in the town of Colden, N. Y. She was found to be feeble and very anæmic, and slight hemorrhage from the tumor was then occurring. Prof. Potter, who was requested to take charge of the anæsthetic, administered some chloroform to the patient, and the tumor was then examined by several of the gentlemen present. It resembled in size and shape an ordinary hen's egg,

Digitized by Google

and was suspended in the vagina by a long, narrow pedicle continuous with its upper and smaller extremity. This appearance, particularly the small and elongated cervix, led some who examined it to doubt its being a uterus at all, and to consider it rather a polypoid growth. But a probe could not be passed along the pedicle into the os, as might have been done had the tumor been a polypus. The uterus could not be detected by palpation over the abdomen. A uterine sound passed into the bladder could be felt by the finger in the rectum above the tumor, and by the hand placed over the hypogastrium; also the finger passed up the rectum came in contact with the anterior abdominal wall as felt by the other hand; all these diagnostic means proving the absence of the uterus from the situation which it ordinarily occupies. By these negative proofs, Dr. White was entirely convinced that the tumor was the inverted uterus, and he therefore proceeded to attempt the reposition of the same in the presence of the above-named gentlemen who accompanied him, and also Dr. Strong, of Colden; G. H. Lapham, of Aurora, and Davis, of Boston. Dr. Potter had produced anæsthesia by chloroform, which he now exchanged for ether, with which he kept the patient anæsthetized during the operation. Dr. White now assumed the kneeling posture in front of the patient between her legs, who had been placed upon the side of the bed so that her hips projected a little beyond its edge, her feet resting in the laps of Drs. Miner and Phelps, who sat on either side of Dr. White, each supporting a knee and holding a hand of the patient. He then introduced his right hand into the vagina, and began manipulating the tumor. This manipulation consisted in compressing the uterus, which relieved its congestion and rendered it more pliable; and in making gentle pressure in the line of the axis of the pelvis by the use of the uterine repositor. After continuing this a short time the doctor brought the tumor down to view, when a glance sufficed to assure the *doubting* of its true nature. By the pressure which had been exerted the neck had been shortened and dilated, the body and fundus reduced in size, the superior angles (now inferior) were distinctly seen, and altogether the tumor then presented the normal outline of a uterus of small size.

The operator's uterine repositor* consists of a stem of wood or hard rubber, about ten inches in length, slightly curved, one extremity of which is enlarged or cup-shaped and covered with soft

* A full description of the uterine repositor, with plates, will be found in the American Journal of the Medical Sciences for April, 1872, and in the Society Reports for 1872.

Digitized by Google

rubber, and made to fit the fundus uteri; the other extremity having attached to it a coil of steel spring wire, against which the breast of the operator may be placed, who, by leaning forward, may exert a constant and gentle pressure upon the uterus, and thus relieve his other hand, with which he can facilitate the repositing by manipulating the upper end of the uterus, either through the abdominal wall or by passing a finger into the rectum. This repositor was again introduced, and a pressure of eight or ten pounds exerted by it, and, at the same time, compression was made by the hand within the vagina upon the portion of the uterus protruding beyond the os, the same hand also retaining the fundus uteri and the repositor in coaptation, whilst the left hand was employed as above suggested. When, in this manner, the cervix had been made to embrace the fundus, the uterine repositor was substituted by a large rectal bougie, with which pressure was continued until the close of the operation.

At the end of an hour and fourteen minutes, Dr. White was obliged to discontinue his efforts on account of the benumbed condition of his intra-vaginal hand, caused by the pressure upon it of the narrow and unyielding vagina. The fundus was at this time within the cervix and above the os, and the Doctor considered the reduction substantially accomplished. He requested Dr. Miner to continue the manipulation, which he did, and in sixteen minutes, or just one hour and a half from the beginning of the operation, Dr. Miner enjoyed the satisfaction of announcing that the uterus, which for twenty-two years had been completely inverted, was now as completely reposited.

Two hours after the operation, when we left her, the patient was quite as comfortable as could have been anticipated. An opiate was administered, and directions were given the attendants to keep her perfectly quiet for at least a fortnight.

By letter dated June 27, Dr. Strong reports: "Mrs. D. doing better than we had dared to expect."

July 2d, Dr. Strong writes: "Our patient is doing well, and nothing has yet interfered with her progress toward recovery." * *

July 19th. "Since the operation upon Mrs. D., nothing has transpired to mar the beauty of the result." The pulse has at no time exceeded ninety per minute." At this time a careful examination "showed the uterus occupying its normal position, the intra-vaginal portion of the neck presenting the ordinary appearances of mild cervicitis. The patient is now about upon her feet some portion of

Digitized by Google

her time, and everything points to a rapid, and I think, perfect cure. She has had no sanguineous discharges since the operation." * *

On the 23d of August, two months after the operation, the following letter was received:

My Dear Prof.: Allow me to congratulate you on the perfect success of your operation upon Mrs. Dubois. I have delayed writing thus long that I might not be required to retract any statements made, in regard to the success of the operation. The most sanguine could not have expected so good a result. She now does her own work, goes on foot to the neighbors, rides ten miles and returns over the hills, and in fine she now seems competent to perform her part in life. On the expiration of four weeks from the operation, she had a regular menstrual discharge, which seemed perfectly normal, both in regard to amount and character. * * *

Your obedient servant,
O. C. Strong.

In order to ascertain her present condition, I addressed a note of inquiry to the Doctor, and received the following reply:

Colden, *Jan.* 20, 1874.

My Dear Doctor: Your note of inquiry is received. In reply permit me to say that Mrs. Dubois is in the enjoyment of good health; that her menses are regular; that in her present appearance one can see nothing to tell the tale of those twenty-two long years of suffering; nothing that speaks of terrible floodings; and, in fine, nothing to show that she ever possessed an inverted uterus. * *

Very truly yours,
O. C. Strong.

Case 11.—In July, 1872, Dr. George T. Hough, a very intelligent practitioner in New Bedford, Mass., wrote me to know "if I could be induced to come there and operate upon a case of chronic inversion of the uterus which had lately come into his hands." After long efforts to persuade the incredulous sufferer and her friends of the feasibility of making an effort for her relief, I was at length invited by him to visit her on the 15th of May, 1873. In passing through Boston on my way to New Bedford, I called upon Dr. George H. Bixby, the celebrated gynæcologist, of that city, and invited him to accompany me. Dr. Bixby was present at the operation, rendered valuable assistance, and furnished the following report to the American Journal of Obstetrics, which I take the liberty of transcribing with many thanks, not only for this report of the case, but for his many courtesies.

"Mrs. H., wife, aged 35, native of New Bedford, first menstruated at her thirteenth year. She married at fourteen, and has given birth as follows: the first, fourteen years after marriage; the second, eighteen months after the first. She was attended in her last confinement, more than six years ago, by an irregular practitioner. After the delivery of the child, the medical attendant left the patient for two hours, and on his return proceeded to remove the

Digitized by Google

placenta in a very rough and hurried manner. For three weeks convalescence proceeded as usual. She was then taken with profuse hæmorrhage. The latter continued in varying quantities and intervals for several weeks, when the family physician was called. Upon examination, he diagnosticated uterine polypus, and a surgeon was summoned to remove it. Accepting and confirming the opinion of the attending physician, the operation was immediately undertaken. The wire of the *écraseur* was with some difficulty applied about the pedicle, but upon making traction it parted. Upon close inspection after the accident, it was ascertained that the case was one of uterine inversion, originally partial, but rendered complete by the previous manipulation. Nothing further was done at the time.

June, 1872, Dr. George T. Hough, of New Bedford, was called. He found the patient confined to her sofa, where she had been almost continuously since her last confinement. She was thin and chlorotic; menstruation had been regular as to time, but profuse. She suffered from frequent attacks of hæmorrhage in the interval, which were provoked by exertions as slight as walking across the room. Frequently slight hæmorrhages through the entire interval of menstruation; at other times there was a complete absence of the same.

A vaginal examination revealed the following: external genitals normal; within the vagina a round, regular, conical body, more or less immovable, and constricted at its superior extremity. Upon the application of the usual diagnostic signs, Dr. Hough pronounced the case one of chronic inversion of the uterus. Not feeling quite sure of his diagnosis, Dr. Johnson, of New Bedford, was called in consultation. Dr. Hough's opinion was confirmed by Dr. J. In June, 1872, Dr. Hough consulted Prof. James White, of Buffalo, by letter, and later Dr. White was called to see the case.

On the sixteenth of May, 1873, an examination was undertaken by Dr. White, in the presence and with the assistance of the following gentlemen: Drs. Mason, of Norwich, Ct., Professor of Physiology in the Buffalo Medical College; Hough, Johnson, Hooper, Vermeyne and Hayes, of New Bedford, and Bixby, of Boston. Artificial teeth removed and urine drawn; etherization commenced by Prof. Mason. When completely anæsthetized, the patient was placed upon the back across the bed with the pelvis near one side, in a favorable position to allow the lower extremities to be flexed and rest in the laps of two seated assistants. By palpation the uterine tumor in the superpubic region was found wanting. The

Digitized by Google

excessive emaciation of the patient rendered this point easily demonstrable. By the vagina, the finger came in contact with a smooth, round, cone-shaped body, more or less movable, and constricted at its upper extremity. By the sound a complete *cul de sac* was found encircling the entire constricted portion. By recto-vesical exploration no interposing tumor was found, consequently the finger in the rectum came in contact with the sound in the bladder. The diagnosis having been fully determined as chronic inversion of the uterus, the operation for its reduction was undertaken as follows: Prof. White assumed the kneeling posture before the patient, and between the two seated assistants. The left hand, well lubricated, was carefully introduced into the vagina, and the fingers slowly insinuated under and about the mass. While the latter was sustained by the palm of the hand. the constricted portion was embraced by the thumb and finger from opposing sides. With the right hand Dr. White's "egg beater"—"uterine repositor"—was introduced into the vagina. its concave extremity placed against the fundus or cone of the tumor, and its spring-end rested against the chest of the operator. This done, the right hand now free, was employed for making counter-pressure above the pubes, or for any other desired purpose. Gentle, but unyielding pressure, rendered equable and manageable by the action of the spring, was continued without any variation for thirty minutes, little more force being exerted than that required to compress the spring.

Thirty minutes after the commencement of the operation, patient in good condition; hæmorrhage insignificant; tumor in vagina still firm; constriction unyielding. One hour from commencement of the operation, hæmorrhage insignificant; tumor more soft; a tendency to collapse, manifested by retarded respiration and pulse, was combated by the injection of an ounce of clear brandy into the rectum, to which the heart's action promptly responded. The "egg beater repositor" was now continued, its action varied by a slow to-and-fro motion of the body upon the spring. One and a half hours, the patient bears the operation well; hæmorrhage insignificant; pulse somewhat accelerated; tumor more soft and compressible; a large size gum elastic rectal bougie substituted for "egg beater." Two hours and ten minutes, under the pressure of the bougie and manipulation with the fingers, the constriction suddenly relaxed, and the organ assumed its normal position.

The patient rallied from the anæsthesia in less than a quarter of an hour. Reaction took place slowly. Notwithstanding this pro-

Digitized by Google

longed manipulation, neither the vagina nor the perineum were in any way injured."

Dr. Hough thus writes in regard to the subsequent condition of the patient: The day after the operation there were symptoms of metritis, which rapidly disappeared under appropriate treatment. There were no bad symptoms following the operation, but two weeks after she suffered from a slight attack of pneumonia from exposure to a draft of cold air at night.

One month after the operation: She has set up, has a good appetite, sleeps well, and gains strength daily; vaginal examination revealed the uterus in a normal position.

Desiring to know the present condition of the patient, I addressed a note of inquiry to Dr. Hough, to which the following reply was received:

NEW BEDFORD, *Jan.* 16, 1874.

MY DEAR DR. WHITE: Yours received. At your request I visited Mrs. Himes yesterday. She says, "Tell the Doctor that I am perfectly well in every respect," and she seems so. Upon inquiry, I find all the functions normal; menstruation perfectly regular, lasting her two days; scanty, if anything. She has lost her chloro-anæmic look, and has a good color. Eats and sleeps well, and in fact is well. * * *

Very respectfully yours,
GEO. T. HOUGH.

There have been reduced, since March, 1856, no less than eleven cases of uterine inversion, varying in duration from immediately after the accident to no less than twenty-two years. These have all been reduced at the first effort, and, so far as could be ascertained, without laceration of tissue. By similar measures other gynæologists in this country and in Europe have succeeded in accomplishing reduction in chronic inversion, and yet its feasibility is by no means uniformly admitted by writers and practitioners Leishman, whose work on midwifery has been brought out in this country during the last few months, at first hesitatingly admits that "elastic pressure alone, or aided by incisions in the neck, will, I am convinced, overcome every case of inversion, except where fixed by inflammatory adhesions." Subsequently he goes on to describe the method of removing the uterus, "when the doom of the patient seems fixed," and adds, under such circumstances "we can have no hesitation in resorting to a measure so extreme as the removal of the organ."*

Schroeder, a German authority, who has been recently translated

* Page 417, Leishman's System of Midwifery. American edition.

Digitized by Google

and published in this country, dismisses the whole subject of chronic inversion, if, indeed, he alludes to it at all, by saying: "Reposition is easy as long as the os is not yet firmly contracted; otherwise great difficulties may be met with, and repeated trials under chloroform may become necessary." *

Barnes, of London, thinks it necessary to invent some new operative procedure, in order to avoid "the various methods of amputating the uterus, or of effecting *forcible* reduction, as by Professor White's method, etc., etc.,† and accordingly recommends incisions in the neck, and gives a plate of an elastic pessary, to aid in effecting gradual pressure. He very justly admits the failure of elastic bags in the vagina, as they, when distended, stretch the vagina excessively, require a firm point *d'appui* in the perineum, which cannot always be had, and also fail to exert pressure upon the fundus with sufficient force and directness." He might also have added in relation to the elastic bags, that they produce painful pressure upon the rectum and neck of the bladder, and cannot be borne by the patient for any considerable time.

In the abstract of Society proceedings, given in the Obstetrical Journal of Great Britain and Ireland, republished in Philadelphia, in the August number, 1873, will be found a very full report of a discussion in the Obstetrical Society of Dublin, on the subject of chronic inversion of the uterus. Two cases, of six and seven months respectively, were reported by Drs. Kidd and Johnston, giving rise to a debate on the subject, in which several members present participated. Dr. McClintock in the course of his remarks, says: "At the same time he was satisfied that cases would arise where all manipulations would entirely fail to replace the organ." The President, Dr. Evory Kennedy, said: "That in dealing with these cases of inversion, they could not classify them merely as acute and chronic. He thought there was an intermediate stage, in which it was *just possible* to reduce by compression the uterus back into its place, but when that stage was passed, the thing became *impossible*. He looked upon it, that up to four or five months after the accident the case was not a chronic one, and that facilities still existed for reducing it which did not exist at a later period." * * Again: "He was not aware of reduction having been effected after fifteen years. He thought the condition of the tissues would be so altered in the

* Manual of Midwifery. By Schroeder. American edition, page 315.

† April number of the Obstetrical Journal, 1873. American reprint, pages 9 and 10.

Digitized by Google

course of ten or fifteen years, that it would be totally impossible to effect reduction at the end of that time."

In the January number of the Obstetrical Journal, a description of the amputation of an inverted uterus is published without one word of editorial comment. It was of only three months' standing, and was excised by the *écrasuer* by Professor Martini Barta, as the only means of arresting the hæmorrhage incident to this condition.

But it is useless to multiply citations illustrative of the ignorance and prejudice which still prevails on this subject. It is absurd for Dr. Barnes to call the procedure heretofore described, a "forcible reduction." I submit that there is no conceivable method of dilating the os and neck of the uterus less forcible, than that of making gentle elastic pressure upon the fundus, producing thereby equable and moderate traction by the vagina, which is attached within the os in complete inversion. The vagina pulls open the os with less liability to laceration than the pressure of the tent, when the os is in its normal position. Eleven cases have been thus reduced at a single effort each, and, so far as could be ascertained, entirely without laceration of tissue in either. The two cases most difficult of reduction were those not of longest duration, but those which had been manipulated or compressed by the *écrasuer*, as in the ninth of six months, and eleventh, when excision had been undertaken, and pressure continued until the chain gave way. It is believed that inflammatory adhesions had taken place in consequence of the operative procedures adopted in these cases, and the difficulty of reposition thus increased. The opinion is still entertained by the writer, that there is more danger in manipulating the uterus whilst it is undergoing the organic change incident to involution, than at any subsequent period.* The fallacy of Dr. Evory Kennedy's views is demonstrated by the successful reduction of cases at seven, fifteen and twenty-two years' duration; and I reaffirm the opinion, "that all cases of inversion can be reduced without qualification as to their duration." A full description of the *modus operandi* of reduction with plates, showing the condition of the organ in its different stages, will be found in the July number of the American Journal of the Medical Sciences, 1858, and I will not detain you with its repetition.

* See reports before this Society of Cases 8 and 9, where the condition of the tissues during the process of involution is particularly described.

Digitized by Google

ARTICLE IX.

A case of Urethrocele—Sectio Vesicalis—Secondary Hæmorrhage.

By L. B. COTES, M.D., Batavia.

I have prefixed this heading under a clear conviction that the complicated disease, embraced in this report, had its origin in the urethra. The disease under this cognomen, however, belongs to a family that has but little literature, and with comparatively limited means for investigation, I have been able to collect but little other than that which has been recently published in the Transactions of this Society.

This disease, with all its concomitant symptoms and effects of common urethritis, as well as those peculiar to itself, must be of rare occurrence; for although Sir Mansfield Clark, as early as 1814, made a record of its pathology, and gave a very emphatic and typical description of it as referred to before this Society by Dr. Bozeman in 1871, I am not aware that it has been alluded to by many others, yet its abnormal appearances and local effects are sufficiently prominent to distinguish it from common urethritis, and it may be a disease, for aught I know, to be regarded as a species of inflammation, *sui generis*, or like some other species of phlegmasiæ, peculiar and specific.

In the Transactions for 1872, Dr. Emmet says: "I have operated during the past ten years some ten or twelve times in chronic cystitis due to disease of the bladder itself." No mention is made of his having made this artificial opening in the bladder for disease commencing in the urethra.

Mrs. M., the subject of this report, was fifty years old at the time of her attack, is small in stature, never weighing more than one hundred pounds, her countenance, hair and eyes are dark, she is of choleric temperament, and seldom in very good health, menstruated first at thirteen, and again at fourteen, after which she was regular until she married at the age of twenty-four.

About two months after marriage she had urethritis, and under the care of Drs. Cobb and Pitcher, of Detroit, where she then resided, was confined to her room, and mostly in bed, for two months; she thinks that the bladder was not seriously compromised at that time.

Digitized by Google

Soon after she recovered from this she became pregnant, and had three labors in regular succession; two of her children are dead, and the one living is not healthy. She has lived twenty years in widowhood, ceased to menstruate at forty-seven, and now she seems to have undergone a physiological change of action, her condition being more sthenic and inflammatory. This was made manifest by her being obliged to relinquish the use of tonics and stimulants which she had occasionally used for debility.

Several weeks passed without intelligent investigation or systematic treatment. Confiding in her original experience, she thought that by a strict observance of rest, and a resort to the known remedies that were recommended at that time, she might come out perhaps as well as she did then.

It was developed, however, that she had experienced premonitory symptoms of diseases in the urinary and genital organs for several months previous to pain or functional derangement. These symptoms were mainly a sensation of fullness and weight persistent in the region of the urethra. It is inferred that these premonitory symptoms were due to a hyperæmic state, that was set up as the initiatory stage to the subsequent thickening and hypertrophy of the walls of the urethra.

About the 20th of July, 1872, this lady began to experience pain, heat, and an inclination to increased frequency of micturition. These symptoms, much aggravated in the erect posture, went on increasing for several weeks, and were uniformly referred to the urethra.

The first attempt to make an examination was in the latter part of August, when it was ascertained that so much vaginal hyperæsthesia existed that speculum examinations could not be made without anæsthetics, and on the 25th of this month, Dr. J. R. Cotes was called in consultation. This examination revealed the complication of hypertrophy of the body and cervix uteri, with extensive abrasion of the mucous membrane of the os and neck. In making this examination, however, the speculum hid the urethra, and its condition had not been anticipated at that time. A subsequent examination revealed the following highly interesting condition:

Upon separating the labia majora, the hiatus presented an appearance very peculiar, and to me entirely unique. The meatus, with its full, pouty, projecting and cylindrical form, stood most prominent. Behind this, and filling the entire space between the labia minora, was a corrugated tumor or pouch, which, upon inspection, proved

Digitized by Google

to be a hernia or prolapsed fold of the urethra; these rugæ were noticed as being very distinct. Upon the surface of the vaginal mucous membrane covering these protruding parts, a network of varicose blood-vessels were seen. Upon introducing the speculum this *cul de sac* disappears, and the bladder is found in normal position.

The disease went on to extend to the *bas-fond* and body of the bladder with its accompanying effects, and on the 3d of October, Prof. James P. White, of Buffalo, was called in consultation. The Professor confirmed the diagnosis (then made), and left his prescription. But the disease continued to increase, the quantity of mucus now large, grew larger, until shreds of mucous membrane and occasionally some blood and muco-pus were seen in the urine.

In January, 1873, small abscesses were formed, and the kidneys began to sympathize. The patient was now informed that the only remedy left for her safety was in making an artificial outlet in the bladder, and the operation was performed on the 18th of February, with the assistance of Drs. Root and J. R. Cotes, in the following manner:

The vesico-vaginal septum, elevated with a strong tenaculum, was transfixed at the trigone space with a tenotomy bistoury, and cut laterally each way about four lines, and with the straight scissors divided perpendicularly from the centre of this line a little more than one inch. The retraction of the tissues made a large opening. The immediate hæmorrhage was but ordinary, and ceased entirely in a few hours. She rallied from the effects of the anæsthetic (Squibb's ether) in about thirty minutes, not, however, "passing from her agony into an elysium of rest," but to experience all the former suffering which was allayed, as heretofore, with anodynes.

February nineteenth, 6 o'clock A.M. Situation uncomfortable; pulse, 120; respiration, 22, with haggard visage; gave suppositories of solid extracts of opium, hyoscyamus and belladonna, to be repeated at intervals of six hours, with fomentations, and rinsing the bladder with warm water.

Twentieth, 8 A.M. Resting better, with pulse at 90; increasing in frequency in afternoon with fever, which subsided at night, and she remained more comfortable until two o'clock A.M., the 22d, the fifth day after operation, when she had secondary hæmorrhage, losing (as was calculated) from thirty to forty ounces of blood in twelve hours, but mostly lost in the first four hours.

This weakened the circulation, and the pulse ranged from 100 to

Digitized by Google

120 for several days, and as the use of tonics and stimulants of any kind were not admissible, she rallied slowly.

Notwithstanding this loss of blood, and the consequent reduction in the heart's force, pain and distress continued,—"an amount of suffering," as Dr. Emmet expresses it, "both of body and mind, unequalled, I believe, by any other infirmity to which our humanity is subject,"—and for three months after the operation, she had so little immunity from this, that she was confined to bed as constantly as before, giving her great anxiety, and leading her to doubt the validity of the operation.

In June, she, however, about four months after the operation, began to experience intervals of comparative ease, and these increasing in duration, she soon commenced leaving her bed and room, and for the last six months has taken the open air, more or less.

Her general health is improving. The urethrocele and meatus are gradually receding; but the condition of the bladder at this date does not admit of a closure of the fistula, which, in dimension, is about five by two lines. The condition of the uterus has also improved, the ulcerations having healed, and the hypertrophy lessened. There has not been an uninterrupted stillicidium (a thing much to be desired) through this opening, mainly, we infer, from the collapsed state of the bladder, as upon every examination the opposite internal surface of it is seen filling the fistula. Effort has been made, digitally and otherwise, to keep up the flow, and it was discovered quite early, that the natural position in the watercloset would produce a perfect drain through the fistula, and that position has been often resorted to when the flow has been interrupted. Of late the spontaneous discharge has been more constant and regular. She is not conscious that any urine has passed, *via naturalis*, since the operation.

In studying the ætiology of this case, no assignable cause could be found, except in the physical changes that take place in the female system incident to her age.

In consequence of some recent articles read before this Society, I have deemed it unnecessary to attempt a lengthy detail of all the morbid changes and interesting matter in connection with this subject

In the printed Transactions of this Society for 1871, Dr. Bozeman has sufficiently illustrated the character and nature of the "order of morbid changes," incident to urethrocele.

Dr. Emmet, in the Transactions for 1872, has done the same in

Digitized by Google

relation to cystitis; and both have given the anatomy, physiology, etc., of this viscus, in connection with the safe point for the operation of cystotomia, with an emphatic conclusion as to its necessity.

It may be presumed, however, that hereafter opportunity will be given to histological research and pathological demonstration, that will reveal more of the true nature, formation and development, of this lately discovered disease.

Digitized by Google

ARTICLE X.

Hæmoptysis. By J. R. Leaming, M.D., of St. Luke's Hospital, N. Y.

Hæmoptysis may be divided into two kinds, according to the source of the hæmorrhage. It may be simply an exudation through the bronchial arteries and mucous membrane—bronchorrhagia, or it may come from some open branch or branches of the pulmonary artery—pneumorrhagia.

These sources, though both in the respiratory system, are yet widely different in their origin, and the hæmorrhages differ equally in their character, significance and danger. One comes from the systemic circulation, the other from the pulmonic. One is arterial blood, the other venous. One signifies obstruction in the capillary circulation within the lungs; the other, that there is destruction of lung substance. One is not necessarily attended with danger, the other threatens instant death. Different and yet similar as are these two varieties of hæmorrhage, they are both described to the popular mind rightly enough, by the common term, "bleeding at the lungs," a phrase which conveys to the people only an idea of horror. The few cases of sudden death from hæmorrhage of the lungs are published far and wide, and are ever remembered; when one spits blood, it is but natural that all interested should fear that his may prove one of the fatal cases. Public fear as well as other forms of public opinion in regard to medical subjects, have their origin *in* the profession. *Through* the profession we hope to so instruct the common mind, as to prevent unreasoning fear, and in this way it seems possible we may save many valuable lives.

Only a small number of cases of blood-splitting are fatal of themselves, and yet many of them otherwise without danger, are the beginning of fatal illness, because of the fright which they induce and of the wrong treatment of which they are the occasion. The anatomical explanation of these facts is the key to our comprehension of the whole subject. The bronchial mucous membrane as well as the fibrous sheaths of the bronchi are supplied with blood by the bronchial arteries, which blood is returned by the bronchial veins; and so far, the analogy of this circulation to that of the body is maintained. But in addition to this, there are in the lungs, arteries arising from the bronchial, perhaps receiving supplies also from

Digitized by Google

the intercostal and the mammary. These arteries go to the parenchyma of the lungs, and are the proper nutrient vessels of the true respiratory system.* In this place it is not necessary to show that they alone provide nutrient blood for the whole true respiratory system, which may be in part fed from the aërated blood of the capillaries and venous radicles of the pulmonary artery and vein. The exact truth on this subject will probably never be known. The singular fact remains, that these nutrient arteries have no venæ comites. Their blood makes a short cut, as it were, through the capillaries of the true respiratory system, and is aërated even while doing its work, and is then passed immediately into the radicles of the pulmonary vein, never going through the right heart at all, and may be said never to have left the systemic circulation.

This anomalous fact in the vascular anatomy of the respiratory system explains how bronchorrhagia may be caused by obstruction of the pulmonary circulation. Blood hindered or arrested in the pulmonary capillaries obstructs the blood in the nutrient arteries. These having no veins accompanying are dammed up, and the blood is thrown back into the bronchial arteries; and these again relieve themselves from the accumulation by straining it through their own vascular walls, and hence this is called bronchorr-hagia.

This form of hæmoptysis is a safety valve arrangement, and its great object seems to be to prevent injury to the true respiratory portion of the lungs. It not only prevents immediate injury, it does more; it stimulates the organic life of the true respiratory system, and the absorbents take up and carry off the obstruction, whether it be plastic exudation upon the pulmonary pleura, or tubercle in the air sacs. Bronchorrhagia may arise from two kinds of pulmonary obstruction—from that which is temporary and extrinsic to the pulmonary circulation, and also from that which is more permanent and which has its seat *in* the respiratory system. The first cause, or extra pulmonic, may be from cardiac disease, hysterical passion, great emotion, or extraordinary exertion. The second, is from obstruction to the circulation through the pulmonary capillaries, as by plastic exudation upon the pulmonary pleura, tubercle in the air sacs, vesicular emphysema, cirrhosis of the lungs, cancer, or benign tumor.

Plastic exudation within the pleura is a frequent and too generally an unrecognized cause. The physical signs of plastic exudation have hitherto been called sub-crepitant—sometimes mucous

* Waters on the Human Lung. Reisseissenn, Cammann and others.

Digitized by Google

rales, or such as were supposed to indicate capillary bronchitis or œdema of the lungs. I shall not here attempt any discussion of these points, as that has been partially done in a previous paper,* but shall merely state that in bronchial hæmorrhage it is practically safer to consider these râles as always indicating plastic exudation within the pleura, notwithstanding any predetermined views that may be held upon this subject. This is not unimportant, nor is it intended to bar discussion as will be obvious, it is hoped, when we come to speak of treatment. The rationale of this cause may be readily understood, if we consider that plastic exudation upon the pulmonary pleura, in addition to the pressure caused by its presence, soon applies that cause effectually by its contraction, and so obstructs the circulation of the pulmonary capillaries immediately subtending the pulmonary pleura.

Tubercle and its inflammatory results are important causes of bronchorrhagia, the more especially as the hæmorrhage may draw *early attention* to the disease, which might otherwise have remained latent until softening and disintegration of tissue had commenced. There is no controversy as to the importance of early knowledge of tuberculosis, and of its early and correct management. Gray tubercle—Bayles' tubercle *true tubercle*, may be so deposited as to obstruct the pulmonary circulation, without furnishing physical signs, except such as are obscure to the general observer; and liable to misinterpretation. The expert auscultator can alone read them with certainty. In both tubercle and plastic exudation within the pleura, the capillary circulation of the true respiratory system is impeded. Hæmorrhage relieves not only the immediate circulation, but it also stimulates the absorbents to remove the obstruction, whether it be tubercle or plastic lymph. From a pretty long observation of clinical facts, I feel warranted in stating my conviction, that I have witnessed this conservative process in not a few cases. The thoroughness of the cure may depend upon the promptness and amount of the hæmorrhage. This is especially so in first attacks. When either of the important causes named, are complicated with inflammatory products in the pleura, or in the lung, the results of older disease, the removal of these products may not be so complete; yet even then, a large hæmorrhage may do very much to clear them away.

Vesicular emphysema gives rise to another variety of obstruction to the capillary circulation in the lungs. The true respiratory system, consisting of bronchioli infundibuli and air sacs, becoming

* Dr. Brown-Sequard's Archives of Scientific and Practical Medicine, March 1873.

Digitized by Google

dilated, bronchorrhagia sometimes follows. The obstruction to the capillary circulation, in this dilated state of the true respiratory system, results from the elongation and narrowing of the capillaries, so that the blood flows slowly or not at all. In old cases of of emphysema, some of the air sacs become destroyed, which still farther interferes with the circulation, both in the pulmonary and nutrient arteries, but with less liability to hæmoptysis, as the system in old cases becomes accustomed to the crippled condition, and accommodates itself to it.

Cirrhosis of the lung is another variety of structural change, frequently accompanied by hæmoptysis. It commences generally in childhood, or early life, and this history assists in making a correct diagnosis. The similarity of its physical signs to those of phthisis, in the third stage, makes it necessary that we should treat of it somewhat particularly. In both there are dullness under percussion, sometimes cracked-pot sound, and cavernous respiration, which, if in the upper part of the lung, may be accompanied by mucous gurgling. There will be, also, in both cases, absence of true respiratory murmur, altered and exaggerated broncho-respiratory murmur, and there may be bronchial or tubal breathing. There may be, also, these rational signs in common—hæmoptysis, cough, expectoration and dyspnœa. They differ in history, and in many of the rational signs. Hectic, loss of strength, night sweats, emaciation, and disease or disorder in other organs—heart, liver, stomach — all belong to phthisis, but not to cirrhosis. In phthisis the amount of circulating blood gradually diminishes, not so in cirrhosis. There is no cachexia in cirrhosis, but it is generally marked in phthisis. Yet the diagnosis of cirrhosis, during an attack of hæmoptysis, must be difficult. A few hints may assist in differentiation. The cavities in cirrhosis are always of moderate size, and regular shape, and consequently the cavernous respiration is smoother in character and softer in quality than that formed in the irregular excavation of phthisis. The sound runs along the open bronchus each way, in cirrhosis, and is conveyed farther from the cavity than in phthisis. The condition of the digestive organs, the fullness and vigor of the capillary circulation, but above all, the history of the long continuance of the case, enable us to make a correct diagnosis. The pathogenesis of cirrhosis is considered to be as follows: Inflammation of the bronchial-mucous membrane extends to the enveloping fibrous sheath, and interstitial plastic exudation takes place, which, contracting, results

Digitized by Google

in stricture of the bronchus. Dilatation follows behind the stricture. In new attacks of bronchitis, plastic matter is thrown outside of the sheath, enveloping and destroying some of the air sacs and bronchioles. As the child grows older, the physical signs give evidence of cavities and consolidated lung. This condition of the bronchi is more or less complicated with plastic exudation within the pleura, which, suddenly interfering with the capillary circulation of the peripheral air sacs, may be followed by bronchorrhagia.

Cancer and benign tumors within the chest may also cause hæmoptysis by mechanical pressure, obstructing the pulmonary circulation. But these cases are rare, and it is not necessary to dwell upon them, for, if there be obscurity at first in the physical signs, the rapid progress of malignant disease soon renders the diagnosis clear.

PNEUMORRHAGIA.

The second grand division of this subject is important on account of its great fatality. Fortunately its class is small, yet the terror which it excites is not unlike that produced by the cry of fire in a large assembly; jeopardizing many more lives by the fright and insane action which it induces, than by any intrinsic danger in the thing itself. Pneumorrhagia implies an open branch of the pulmonary artery. For practical purposes, we shall consider it merely as the effect of erosion from disease, presupposing a cavity to have been found. Even in the third stage of phthisis, pneumorrhagias are rare among the number of hæmorrhages. Pneumorrhagia is possible after the rapid formation of a cavity, and becomes probable if the locality be near the root or center of the lung, where the vessels are large and abundant. The rapid disintegration of tissue renders the branch of the pulmonary artery which passes across, or through the decaying mass, liable to morbid change, which may take the form either of disruption resulting in sudden death, or by shrinking up, become impervious, and so remain for years. It becomes then a matter of great moment to watch the formation of cavities, in what may be called a dangerous position, and to so guard the patient during the unavoidable process, as to render accidents of minimum probability.

Severe coughing should, in such circumstances, be allayed by opiates, which before, perhaps, had been avoided. Exertion and emotion should not be permitted to disturb the pulmonary vessels. Small blisters may be constantly changed from place to place over

Digitized by Google

and around the forming or formed excavation, in order to glue the pulmonary and costal pleura together, preventing motion in that portion of the diseased lung, long enough for a clot to be formed in the artery. Nature sets us the example, for no cavity forms near the surface of the lung, but that its immediate vicinity is bound down by adhesions. Reisseissenn, Marshall, Hall and others, taught that the anastomosis of the pulmonary arteries was general and free. Dr. Cammann* in his experiments by a series of injections into the blood vessels of the lung of the sheep, proved clearly that this was a mistake; that instead of there being free anastomosis, there is properly none at all. Each lobulette is a complete type of the lung and has no anastomotic connection with any other part, so that ordinarily cavities in phthisis, gangrene, or abscess, are rarely accompanied by pneumorrhagia, and only so by the accident of their opening a branch of the pulmonary artery.

If the cavity just formed is centric, with no pleuritic adhesions, the rational signs will have been so slight as not to have drawn attention. The patient may be in attendance upon ordinary duties, when the first mouthful of blood is raised. A lady teacher in one of the public schools is standing before her class, giving instruction, when she raises a mouthful of blood and immediately retires to a side class-room. The blood pours from her mouth and nose, and she falls to the floor, and is dead before a messenger can be dispatched for help.

A gentleman, in his bed-chamber, touches the bell and comes to the head of the stairs with a vessel in his hand, and calls to the family that he is spitting blood, and desires a physician. They hasten to his assistance, but he has fallen upon the floor, and is dead when they reach him. Sudden deaths from pulmonary hæmorrhage are rare, but they sometimes occur.

Other cases of pneumorrhagia are not so immediately fatal. There may be several attacks before the patient succumbs. The cavity may be small and the opened branch small, or the motion in the diseased lung may be resisted by pleural adhesion. In the latter case it is possible the hæmorrhage may be arrested permanently. A clot forming in and filling a cavity in a portion of the lung restrained from motion, may remain there long enough for the eroded artery to shrink and become impervious. But even if the cavity be small and the arterial branch small, the frequent recurrence of hæm-

* N. Y. Medical Journal, 1848.

Digitized by Google

orrhages may finally exhaust the patient. This form of pneumorrhagia may be mistaken for bronchorrhagia, occurring after extensive plastic exudation within the pleura. But with the absence of cavernous respiration or signs of consolidation of the lung, and with the presence of plastic or sub-crepitant rales, the diagnosis need not be uncertain.

DIAGNOSIS.

It needs no argument or farther accumulation of evidence to show the great value of a clear and correct diagnosis in hæmoptysis. It is of the first importance to diagnosticate between bronchorrhagia and pneumorrhagia. In a large proportion of cases, the medical attendant may state, in the most emphatic manner, that there is no danger, and refuse useless or harmful medication.

His presence, and the confidence which he inspires, relieves apprehension and fright, and by wise advice he may prevent serious consequences. The chances are, perhaps a thousand to one, that a case of hæmoptysis is bronchorrhagia. It is best to assume this until a certain diagnosis gives evidence to the contrary—which turns on the presence of cavities and consolidated pulmonary tissue. If there be no cavernous respiration, and no evidence of consolidation, and, in addition, if respiratory murmurs can be heard *throughout* the lung, it is clear that there can be no cavities. This determines definitely for the larger number of cases, and those not thus assured may be classed as doubtful. In virtue of the same negative evidence, and by further examination, we may satisfy ourselves, almost with certainty, that a large majority of these last are also cases of bronchorrhagia. If the walls of the cavities are hard and unyielding, it amounts, almost to a demonstration, that the hæmorrhage is not pneumorrhagia, for the hardened walls are a sign that the cavities are old, and that the branches of the pulmonary artery that traverse them are probably impervious. If cirrhosis of the lung be diagnosticated, it is certain that the hæmorrhage cannot be pneumorrhagia.

TREATMENT.

When a cavity is forming, or has just formed, without previous disease in that portion of the lung, if the position be central, the progress of the disease rapid, and the lung free in its motion, not *held* by adhesions, the danger from pneumorrhagia is imminent and should be guarded against. Pneumorrhagia may be so speedily fatal, that there will be no time for ordinary remedial measures. It

Digitized by Google

was suggested to me by the late Dr. S. P. White, that it might be possible to arrest hæmorrhage from the lungs, likely to be fatal, by standing the patient upright until syncope should take place, and then placing him in a recumbent position so that a clot might form in the cavity. I am not aware that this has ever been intentionally tried in practice. But we know that some of the patients were standing upright when the bleeding began, and fell from exhaustion or syncope, and so had the advantage of this hypothetical method without avail.

The appalling cases of fatal pneumorrhagia arise from central cavities of large size, and from the erosion of large vessels. Should a clot even be formed, and the patient recover from syncope, the unhindered motion of the free lung would soon dislodge the clot and the hæmorrhage would again commence. Unfortunately, the history of these cases shows that they are too speedily fatal for a clot to form. In a smaller cavity or in a smaller open vessel, there is more likelihood of the formation of a clot, and the temporary arrest of the hæmorrhage. But even here, when the cavity forms in the centric or dangerous locality, the clot is soon dislodged and the bleeding re-commences, and this alternation continues till the patient sinks exhausted. In this variety of pneumorrhagia, however, there is time for something to be done. The danger is from recurrence of bleeding, by displacement of the clot. If this can be prevented long enough, the vessel may become impervious, and immediate death be avoided. There can be no hope to fill the indication but by mechanical interference; medicines have no power over opened vessels, in the center of the lung. Our experience suggests that nature has here pointed the direction that our endeavors must take to afford any hope of success. Motionless lung alone can permit the closing of the vessel, and nature secures this condition by adhesions. We might in some degree imitate her by transfixing the lung in the diseased part, and holding it still till the danger is past. Needles of platinum or gold, passed through the lung, might successfully prevent motion, and might remain until inflammatory action should be set up, and thus effectually prevent a recurrence of hæmorrhage. Or the needle of the aspirateur could be passed into the cavity and an injection of liquor ferri per-sulphas, or other powerful styptic could be thrown in, which would form a firm clot in the open vessel as well as in the cavity, and the hæmorrhage be permanently arrested. This presupposes an accurate diagnosis of the position of the cavity.

Digitized by Google

As said before, fatal pneumorrhagia is not likely to occur near the surface of the lung, where the contiguous pleura is bound down by abundant adhesions. It is a wise precaution to frequently apply small blisters over and around, forming or recently formed cavities. This measure not only guards against pneumorrhagia, but it prevents a cavity discharging its contents into the pleura, causing hydro-pneumo-thorax. Effusion of serum into the pleural cavity would pretty certainly arrest pneumorrhagia by mechanical compression. This condition might be artificially produced by pumping water into the pleura. Ligaturing the limbs with a tourniquet or strap is easily performed, and is a practical method of arresting hæmorrhages, for it prevents the return of venous blood to the right heart, and temporarily relieves the pressure in the pulmonary circulation. The hæmorrhagic act is preceded and accompanied by an eager hastening pulse-beat, which the medical observer soon recognizes, and advantage may be taken of this monition to gain time for the application of mechanical means. If some of these means suggested seem to be harsh, it must be remembered that the occasion is desperate, and none other are of any use, or promise any hope. Medicines given by the mouth can have no control over a bleeding artery in the center of the lung.

In bronchorrhagia there is no danger of sudden death, and consequently there is time to select the best method of treatment. When the cause is extrinsic to the lungs, the remedy should be to the cause and not to the symptom. In hysteria, the treatment should be to the disease, and the same in cardiac affections. The hæmorrhage *per se* gives relief, and when left to itself it may be safely said is never other than beneficial. After an hysterical hæmorrhage from the lungs, which may have produced alarming fright in the bystanders, the patient may fall into a gentle and placid sleep, from which she awakes relieved. Bronchorrhagia, arising from obstruction to the pulmonary circulation from a diseased heart, must be treated by paying attention to the heart alone, endeavoring to give it force and power to equalize the circulation. Stimulating enemata, brandy by the mouth, mustard foot-baths, the sedative action of calomel, digitalis and nux-vomica, may relieve the heart from its oppressed condition, and the hæmorrhage will cease naturally.

Bronchorrhagia, resulting from obstructed pulmonary circulation caused by plastic exudation upon the pulmonary pleura, is of more frequent occurrence than any other, and its mismanagement may be followed by the most serious consequences. The lung, oppressed by the presence of plastic exudation, is more and more crippled by

Digitized by Google

contraction. A large hæmorrhage at the beginning is frequently followed by the immediate removal of the cause.

Attempts to arrest this hæmorrhage are generally futile, but the evil results of the methods used, and the delay in applying proper remedial measures, may end in what is popularly known as "hasty consumption." The old custom, lately reinstated by the translation of a popular German text-book, is to place the patient in bed, in a semi-recumbent position, to direct that he be kept quiet, to speak only in whispers, not to cough, to darken the room, and prevent all motion that may be avoided. In addition to this, medicines are given to *stop* the hæmorrhage—acetate of lead, opium, kino, tannic acid, gallic acid, mattico, ergot, spirits of turpentine and table salt. In spite of all this treatment and mismanagement, the bleeding continues more or less at intervals, causing prostrating fear to the patient, and agony to the loving attendants. This may go on for days or weeks, until nature giving up the contest, the bleeding may cease, only to be followed by disintegration of tissue, rapid tuberculosis, and death. An entirely opposite treatment might have saved life. But instead, the effort of nature is thwarted and rendered of no effect. The threatening conditions which she would have changed, if she had not been prevented, are carefully preserved, and in addition to all this, the exuded blood is kept in the bronchi, decaying and offensive, causing local inflammation and general depression; medicines which do harm to the patient and do *not* arrest the bleeding, are resorted to, while all that should be done is left undone. It is no wonder, viewed in this light, that hæmorrhage causes phthisis. Would it not be better to say rather, that the physician cultivates phthisis? As illustrating the possible consequences of repressing all effort to relieve the chest in cases of hæmorrhage, there is an instructive case in Graves, who reports the incident of a gentleman who had several hæmorrhages in one day, and was visited by Dr. Stokes, who found him collapsed (he had also been bled from the arm) and well nigh asphyxiated. The right side of his chest was expanding and contracting energetically—the left almost fixed and motionless. Dr. Stokes changed his position and gave him a glass of wine, when he made an effort and violently expectorated a fibrinous coagulum, forming a complete mould of the left bronchus and its ramifications. Loevenhard, quoted by Valleux, cites a case of a woman to whom alum had been administered, in hæmoptysis, with the hope of arresting the hæmorrhage, and apparently with effect, but, upon the cessation of the bleeding,

Digitized by Google

suffocation became imminent; and from this danger the woman was only relieved by the rejection of a large quantity of coagulated blood.

What then should the physician do, if called to a case of this nature? His first determination should be *to do no harm.* He should, by his cheerful, confident demeanor, inspire the patient and friends with his own courage. Then, after auscultation and the diagnosis of bronchorrhagia, he should insist upon the patient speaking aloud, that he should breathe freely, sit up, walk about, cough and expectorate all the blood he can. There is no danger of increasing the hæmorrhage by coughing, loud speaking and full respiration; these acts merely help to loosen and dislodge the blood already exuded into the bronchi, and which is there obstructing respiration. It should be the object of the treatment to expel all of the exuded blood, before any part of it becomes putrid. Clearing out the bronchi, and full respiration, do not increase the exudation; on the contrary these healthful acts go far to equalize the circulation, and help to arrest farther hæmorrhage. Salt and spirits of turpentine are innocuous; but do not let the patient believe that they are given for the purpose of arresting hæmorrhage. It is best to stand firmly upon the ground that the hæmorrhage is beneficial, and should not be arrested. On this account we should refuse any medication. If the bleeding does not soon cease, the patient begins to lose confidence in the doctor's ability to arrest it, which may be calamitous. The confidence inspired by the presence of one believed to have power to help us, gives tranquillity of mind, and that steady nervous action, which, operating directly on the heart, equalizes the circulation. Directly the cold extremities become warm, the oppressed breathing becomes free, and these facts prove that the pulmonary congestion, or stasis, is relieved. Many remedies have gained reputation for power they did not possess, by the real power of a trusted physician's presence, acting through the emotions upon the organic life of the body. As soon as a diagnosis can be made between plastic exudation and early tuberculosis, a line of treatment should be adopted, not to cure the bleeding, but to remove the cause. In both plastic exudation and early tuberculosis, all the special treatment should be the same.

The lungs should be frequently and systematically expanded; as much fresh air should be inspired as the system will accept. The diet should be nutritious, not over-stimulating, but such as is known to be most beneficial in tubercular phthisis. If plastic exudation should be diagnosticated by finding persistent sub-crepitant

Digitized by Google

or mucous rales, soft tearing near the ear, without dullness of the percussion note, its early removal would be an object of the highest importance. Nothing helps us, in this object, more speedily perhaps, than the bleeding itself; and, for this reason, we should not arrest it, even were it within our power to do so. The beneficent and harmless action of calomel, when used for its sedative effect, in cases of commencing or threatened inflammation, is not so well known as it deserves to be. In Graves' Chemical Medicine,* its qualities and capabilities are well set forth. In Dr. Lent's paper,† its successful and safe application in dysentery, and some other inflammations, is ably maintained. In recent plastic exudation, followed by hæmorrhage, its beneficent and prompt effects are more remarkable than they are in any other inflammation; it wipes out, as it were, all evidence of the disease. The hæmorrhage ceases, the sub-crepitant and mucous rales disappear in an incredibly short time, leaving the patient well. It has been fashionable, of late years, to speak of calomel and bleeding as improper remedies in any case. No doubt they have been abused, and so too have many other good instruments which have not been discarded.

Above all things, it is important that specifics and styptics, of whatever name or character, especially those that may depress the vital power or derange the digestive organs, should be withheld in bronchorrhagia. Our one object should be to remove the cause.

---

* Pp. 803, 806, inclusive; edition of 1843, Dublin.

† N. Y. Medical Journal, March, 1869.

Digitized by Google

ARTICLE XI.

Pathology of Insanity. By JOHN P. GRAY, M.D., Superintendent of the New York State Lunatic Asylum.

On two former occasions I read before the Society papers on the physical nature and causation of insanity, and last year presented a few photo-micrographs illustrating some of the morbid changes which, up to that time, had been discovered upon *post-mortem* examinations. With a single exception the illustrations were taken from chronic cases, for, although a large amount of material had already been prepared, the arrangements for successful representation by photo-micrography were not completed, nor until then had we been able to secure reliable, healthy brain tissue for comparison. Furthermore, up to that time we had been able to examine microscopically but one case of acute insanity, and in that instance only from the hardened brain.

Since the arrangements have been perfected in the pathological laboratory, we have obtained and examined healthy brain and nerve tissue, and also two more cases of acute insanity, and been able to make photographs from fresh as well as hardened tissue. In the portfolio here presented, are photo-micrographic illustrations of healthy brain tissue, acute, sub-acute and chronic mania, melancholia in acute and chronic stages, dementia, general paresis and epilepsy, and in connection with each, a descriptive text, presenting a brief history of each case. These investigations embrace the microscopic examination of 52 cases, and especially the changes found in the vessels, nerve fibres, cells and neuroglia or connective tissue.

As I have heretofore stated (see Am. Jour. Insanity), in all cases, the vessels, nerve cells and neuroglia undergo changes in their composition and arrangement before marked impairment of the conducting elements of nerve fibre takes place. The increase of interstitial matter between the fundamental nerve elements has been prominent, and while there has been a multiplication of connective fibres, there has been diminution of connective nuclei.

In chronic cases the increase of neuroglia, in the gray and white matter, has been characteristic, reaching a higher degree in the gray matter, and appearing more in the anterior than the posterior

NOTE.—This article will be printed in the American Journal of Insanity, with illustrations.

Digitized by Google

regions. The alteration has been found frequently in connection with the capillaries, more generally, however, in localized regions, in the cerebral tissue, circumscribed in a cystic cavity, formed by condensed, minute connective fibres. These isolated masses consist of a granular and friable matter, becoming transparent in the advanced stages, and in some cases even converted into a serosity. These granular products are not fatty, and are not dissolved by ether, chloroform or alkaline solutions. They become darker and more distinct when treated by acetic acid, and though remaining solid, do not exhibit a homogeneous mass.

The study of these developments would lead to the conclusion that they originate in the interstitial elements of the nerve tissue, and that, in their growth, they produce, through mechanical pressure, rēabsorption of nerve cells and fibres. The cavities in which they are contained vary in size from those of the nuclei of multipolar cells, to such as can be seen with the naked eye, constituting the pisiform excavations which give to the brain sections in cases of chronic insanity, the gruyère cheese appearance described by French alienists. Such cavities occasionally result from capillary hæmorrhages; then, however, the surrounding tissue shows discoloration, changing from yellow to a dark, rusty brown, from infiltration of coloring matter of the blood. The cavities here described exhibit no such tint, nor are they in direct connection with the capillary vessels as the cysts proceeding from old apoplexies are. In this condition the brain elements disappear by rēabsorption in scattered points. under a circumscribed necrobiosis originating from local conditions under the morbid process developed in the brain. Be this as it may, it seems evident that such isolated absences of tissue throughout the cerebral hemispheres, cannot be regarded as a consecutive effect of distant lesions. How much share these broken connections between the perceptive brain cells, and those of the peripheral part of the special senses take, in the causation of hallucinations and other sensorial phenomena, peculiar to insanity, is difficult to determine, although the fact appears worthy of notice in this special connection.

The alterations in the cerebral tissue, in general paresis, originates mainly in the vascular system, as has been shown by the researches of Virchow, Westphal, Salomon, Lockhart Clark, Sankey and others, and to this origin must be ascribed the epileptiform symptoms so frequently attending general paresis, and deriving their source in local disturbances of the cerebral circulation. The change begins

Digitized by Google

in the adventitious sheath of the arterioles and larger capillaries, first described by Virchow and Robin, which becomes distended in a small portion of its extent, sometimes uniformly around the minute vessel within, at others bulging out laterally, the enlargement thus produced being filled with lymph, granular cells and hæmatic crystals, or granulations; more generally the vessel is twisted or elongated, exhibiting a fine, fatty degeneration of its coats which are often torn asunder, allowing the blood to escape into the lymphatic surrounding sheath, where it coagulates and ultimately undergoes a fatty change.

The nervous elements in the vicinity of the blood-vessels are also involved in their structure, and equally undergo an alteration characterized by a multiplication of connective fibres and molecular granulations. To such a proliferation of connective elements is due the peculiar firmness and pellucid appearance, with change of color, displayed in the gray substance, and which Baillairger (Annales) has described as one of the characteristic pathological changes of the brain in general paresis.

The condition of the brain in epileptic insanity, and especially the alterations in the medulla, agree in appearance and character with those pointed out and described by Dr. Echeverria in his work on epilepsy.

J. Hughlings Jackson defines epilepsy to be "an occasional, sudden, excessive and rapid discharge of gray matter of some part of the brain," thus constituting it a truly cerebral disease. We have been particular to examine cases of epilepsy, and though we have a large number of preparations, have not yet reached the point of much illustrative work, and consequently present but a few plates. In these, however, these morbid changes are very marked, especially the pigmentation of multipolar cells. It is highly important to determine whether the epileptic phenomena of convulsion and unconsiousness are simply in the nature of functional modification due to instability or increased susceptibility of brain tissue, or to some deeper change taking place in the vascular system and fundamental nerve elements. Whatever the initiatory processes may be, investigations show that in the progress of the disease there are profound degenerations, and that some form of insanity is likely to be superinduced sooner or later in the course of persistent epilepsy. Furthermore, the history of the disease shows the uncertainty and unreliability of the frequent actual arrest of the disease, by its return,

Digitized by Google

even in the majority of the favorable cases, where a cure seemed to have been effected.

We have irritable nerve matter in nervous excitable people, and nervous exhaustion, as expressed in persons of high cerebral organization, by sudden failure of mental power and activity, and quick recuperation under rest; but these conditions are very different from the nervous explosions of epilepsy and the mental enfeeblement or degeneration so apt to follow continued epileptic seizures. If epilepsy, in the beginning, is simply loss of stability or malnutrition, its persistence, in so large a proportion of cases, in defiance of treatment, and its universal tendency downwards would certainly justify the probability of a grave lesion at the foundation as the true *fons et origo.*

In fact, to say that disease is functional is simply to admit that we do not know what has taken place, or that we have only studied the phenomenal symptoms. The theory advanced by Hughlings Jackson, and indicated in his definition of epilepsy, that certain regions of the brain are so affected in epilepsy as not to hold, store up and give off as required, nerve force or energy in a normal way, but to discharge the whole suddenly and rapidly, and thus produce convulsive movements in those parts anatomically related to such a discharging center, in the brain, is perhaps the most satisfactory that has been presented. Assuming that the brain consists of many separate centers, each having a distinct relation through the motor tracts to the separate parts of the organism, this hypothesis would seem to account for the local as well as the general convulsive phenomena presented in this extraordinary disease. It still remains, however, to determine what relation the gray matter may have to motor action, and whether the disease, in its earlier or initial stage, is located in the medulla or gray matter of the brain.

The case of syphilitic insanity, of which several photo-micrographs are presented in the portfolio, adds further proof to the fatty degeneration which constitutional syphilis brings about in every tissue.

This is the only instance of syphilitic insanity of which we are able to present photo-micrographic representations. The insanity in this case was of an acute form, and the plates, while revealing such profound fatty degeneration, at the same time show, in a marked degree, the alterations characteristic of acute insanity. The history of this case in the beginning was one of typhoid fever, and the physicians giving the certificate for his admission to the asylum (he was indicted for homicide) had hesitation in his case, and on his admis-

Digitized by Google

sion the mental phenomena of insanity were only slightly indicated. He died soon after and a *post-mortem* examination revealed extensive inflammation of Peyers glands with ulceration.

The capillary system has participated in the morbid processes in every instance, but it has seemed to be affected primarily, particularly in general paresis and epilepsy. The nature of the alteration has been ultimately atrophic in every case, that is, resulting in the disappearance of central nerve elements, to wit: nerve cells and fibres, with a remarkable hyperplasia of amorphous matter and connective fibres. In acute cases the involvement of the fundamental elements in the morbid process has appeared to have taken place rapidly, and without any observable effusion of lymph throughout the tissue. Such a morbid process cannot be looked upon as of an inflammatory character, for no proliferation of capillary vessels or the so-called inflammatory corpuscles of Bennett, have occurred.

The trouble here has rather betrayed itself in a condition of intense irritation, exhausting the power of the cerebral cells, and ultimately bringing on their consecutive necrobiosis. This assumption is perfectly consistent with the phenomena of restlessness and delirium, found in acute mania, and is furthermore strengthened by the discovery made by Brown-Séquard, that in cases of paralysis from injury, without irritation of the nervous centers, the consecutive alterations of nutrition are slow in their progress, while on the contrary, with irritation of the brain and cord, alterations of nutrition and structural changes supervene rapidly. I would call especial attention to the plates representing acute mania, and to uniformity of lesion observed.

More than two years ago, Dr. E. R. Hun, in examining, in the Asylum, under the microscope, recent sections in the first case, acute under consideration, observed certain spots, the nature of which, however, we are not able to determine. Dr. Hun described this morbid appearance as follows: "While examining the brain of a female patient who died during an attack of sub-acute mania, in August, 1871, I saw for the first time a peculiar lesion of the tissue of the brain and spinal cord, which I subsequently met with in a number of cases, not only of acute mania, but also of other forms of insanity. These sections of the tissue, previously hardened in absolute alcohol, were made and colored with carmine, rendered transparent with benzole, and mounted in balsam. Examined by transmitted light, they could be seen with the naked eye, studded with small white spots, which were very numerous and of variable size. Under the microscope these

Digitized by Google

spots presented a granular appearance, and many of them contained a number of elongated crystalline bodies. They did not imbibe the carmine solution to the same extent as the surrounding healthy tissue, and were of a pale greenish color. Their edges were not well defined, but the deposit seemed gradually to merge into the normal brain substance. They were circular or oval in form, and varied in size from one-twentieth to less than five-hundredth of an inch in diameter. In some instances the nerve fibres seemed to pass through them, but as a general rule they seemed to be destroyed."

We now find that the spots are not colored by carmine at all. The sections then examined by Dr. Hun, were thick, and what appeared to be a slight coloring by carmine, was due to coloring of brain tissue under and over the spots.

Dr. McKendrick, assistant to the physiological chair in the University of Edinburgh, found that in ten days after wounding the brain of pigeons, around the cicatrics, where they were healing, certain bodies appeared which, upon examination, were seen to be colloid. Batty Tuke says : "Colloid degeneration is one of the most important and interesting forms of brain lesion, being I believe the primary pathological change in certain of the most prominent and well defined varieties of insanity. I will merely say now that good reason exists for believing that upon colloid degeneration depend those cases in which the vague term brain disease is employed to indicate that a primary affection of that organ is the exciting cause of the mental symptoms."

In the case of the pigeons, these colloid bodies would seem to be a hyperplasia, dependent on physiological activity in an abnormal degree, in the process of reparation.

Since writing the above and within the past week I have received from Voisin, a pamphlet, giving in brief detail three cases reported by him. with illustrations. I have appended this little pamphlet to the plates in the portfolio, inasmuch as his plates are so much like those of the case of acute mania referred to in plates 44, B, C, D, F, H, K.

The disturbance or arrest of functional action, or its increased activity in an organ morbidly affected, only in a circumscribed or limited space, is already well recognized, and may be illustrated in cases of limited pneumonia, where the whole organ, however, suffers in its functional action. We see the same indeed in other organs, as the liver, kidneys, etc. Limited or regional disease of

Digitized by Google

the brain and spinal cord, is also a well-settled pathological fact, and in paralysis, epilepsy and traumatic injuries we have marked examples.

In hemiplegia, a lesion in the motor tract not only produces paralysis of the anatomically related muscles, but a temporary and partial paralysis of muscles not so related. Whether this latter is due to shock or physiological sympathy, it is not necessary here to discuss; I simply refer to the fact. In severe cases of hæmorrhage into the motor tract and consequent hemiplegia, there is also more or less mental shock, and even mental disturbance, showing a convolutional relation with the motor lesion. On the other hand, a hæmorrhage on the surface of the brain instantly affects the motor tracts.

The application of the theory of limited or regional lesions in insanity would seem to be not only in accordance with what we discover in other cerebral diseases, but is sustained by the phenomena of the disease and by pathological investigations.

In a case of mania of but a few days' standing, we discovered in the fresh specimens, when under the microscope, along the true inner wall of the capillary vessels, and between the wall and the delicate lining or intima, small granular masses in spots presenting so large an accumulation as to practically produce a thrombic condition of the vessel; in others producing an occlusion and practically an embolism. These granular bodies are also collected near the branching of vessels. In another case of mania, where the disease was farther advanced, we have observed colloid bodies, a semi-transparent nitrogenous plasma, proteinaceous in its nature, scattered through the tissue and not confined to the line of the vessels, and as it will be observed from the specimen, sometimes so thickly spread out as to occupy nearly half the space over the section. The former would seem to be the earliest morbid product of the physiological change, initiating the subsequent cerebral pathological condition, thus sustaining the opinion of pathological observers that the change commences in the vascular system, and that the central nerve elements, the cells and neuroglia are consecutively or sequently involved. This is sustained by the further observation that the amyloid bodies, a non-nitrogenous product, which are observed in the more advanced conditions, and especially in chronic insanity, dementia and general paresis, are found also along the vessels in the location of the original granular bodies, these amyloid bodies being evidences of advanced degeneration, found not only in sections immediately after death, and in

Digitized by Google

hardened brain tissue, but also developed in the brain after death when kept in moist and not over-warm locations. The earlier granular bodies spoken of, when they spread over a more or less extended region, limit the circulation in the vessel, and by impeding it induces, first, a local hyperæmia, and subsequently, by cutting off the supply of blood, or largely embarrassing it, a local anæmia; hence, we have nutrition not only impaired, but to a certan extent prevented, and the brain cells being thus deprived of blood, finally pass into conditions of fatty degeneration and necrobiosis. Again, in cells feebly nourished, or subjected to pressure of a mechanical nature arising from a proliferation or increase of connective tissue or neuroglia, there is an embarrassment of functions, at times amounting to actual suspension. This increase of neuroglia is found in all stages of the disease. Indeed it will be observed that this increase of interstitial or amorphous matter has largely obliterated the nerve elements.

Some observers, and prominently Batty Tuke, probably judging from this general distribution or increase of interstitial matter, suggest the idea that the disease commences in the neuclei of the neuroglia. The colloid bodies found so profusely in the early stages, and being in the nature of normal plasma, are quite probably material thrown out under increased functional activity as an attempt at a reparative process, just as we have plasma thrown out in œdema, or as in the provisional exudations which occur preparatory to the reparative processes in lesion of various parts of the organism.

If the earlier granulations in the walls of the vessels and the materials thrown out are rēabsorbed (a process of rēabsorption we know to be reparative in other organs, as in pneumonia, congestion of the lungs, glandular swellings, erysipelatous œdema, etc.), recovery takes place, if not, as before stated, the death of the tissue follows from malnutrition, or partial or complete deprivation of nourishment from pressure, etc., and the portion of the brain involved passes into a permanent condition of disease, from transformation, by degenerative processes, into fat and interstitial amorphous matter.

As previously stated, the higher elements, as the nerve fibres and cells, are the last to give way. They often preserve their vitality, however, under a low degree of nutritive action, and when the slow absorption of material releases them from pressure, we have recovery in chronic cases.

A fact which seems of the utmost importance is the similarity of

Digitized by Google

histological changes attending the different forms of insanity, as represented in the photo-micrographs, and, indeed, in all cases which have fallen under observation. If such regularity is displayed in future investigations, as I am strongly led to believe will be the case, this fact will practically confirm the principle, that in insanity we have to contend with only one diathesis, manifesting itself under different phases in its progress and results. The correspondence between degenerations of the cortical substance and of the central ganglia, pointed out in France by Luys, Laborde and Charcot, and in this country by Echeverria, has found further confirmation in these researches; whereas, lesions in the structure of the third left convolution, as Bouchard, Echeverria, Batty Tuke and others have already shown, have not necessarily involved the existence of aphasia or amnesia. The importance attached to this subject has led me in every instance to direct investigation particularly to this region of the brain. I simply state here the result, hoping to treat this question at some future time, when the material may be sufficiently abundant to determine the exact value of the ingenious theory so confidently put forth by Broca.

From continued investigation I feel justified in expressing the conclusions heretofore reached. (May, 1873.)

The distinction between the appearance of the cerebral tissues, in the specimens presented, of mania and those of general paresis and epileptic insanity, would seem to uphold the separate class assigned to the last two forms of disease in the classification adopted.

Although the cases thus far examined may be regarded as insufficient to establish general conclusions, they go to strengthen the conviction sustained by the laws of general pathology, that insanity is a physical disease of the brain, and that the mental phenomena are symptoms. Further, that the microscope, with patient and close investigation, will continue to disclose structural changes in the cerebral tissue, as marked as those heretofore unsuspected, when examinations were limited to the scalpel and naked eye; and in these investigations, when the entire range of the disease, in every stage of its progress, shall have been brought under the microscope, we may be able to solve the problem of the morbid processes conveniently denominated as insanity.

Another conclusion to which these investigations would naturally lead is, that the variety and changes in the predominant symptoms of insanity may find their explanation, not so much in the variety

Digitized by Google

of lesions, as in the special parts of the cerebral centers which are morbidly involved in each case; or, to bring the idea within narrower limits, that emotional, ideational and motor disturbances have their foundation in the extent and degree to which the nerve elements that minister to the execution of intellectual and motor acts are involved in the lesion. When the disease reaches its ultimate stage all distinctions cease, dementia being the same closing stage of every so-called form of insanity.

The bodies or cells heretofore referred to in acute insanity, are the so-called granule-cells of the German authors,* a peculiar fatty cell formation, which, first observed in the spinal cord, for a time were considered as a pathological change, especially relating to general paresis (progressive paralysis). After more extended investigations, however, embracing over three hundred cases, only a part of which were accompanied by the symptoms of paresis (paralytic dementia), and after discovering the same lesions in acute as well as in chronic cases, and in all regions of the nervous centers, the theory gained ground, that these transformations of the tissue elements into granule cells were general phenomena, produced by a general or local disturbance of nutrition.

The extent to which they appear is, undoubtedly, in all instances of the greatest importance. They have been found as a component part of senescence, but also in the cord of children only a few months old.

Their relation to inflammation of the spinal marrow has led authors to distinguish between simple myelitis and myelitis connected with a formation of granule cells; the last, without regard to paralytic dementia (paresis), and frequently connected with phthisis, and in cases of chronic mania and melancholia of long standing, and especially in cases of senile dementia (Simon) accompanied by paralytic symptoms. The affection of the dura and pia spinalis, known as chronic spinal meningitis found in connection with phthisis, as first pointed out by Simon, may lead to a closer study of the symptoms of the so-called granule-cell myelitis, without being complicated with affections of the nervous centers.

---

* Theod. Simon: Archiv für Psychiatrie Bd. 1 Heft. 3, Bd. 2 Heft. 1 and 2.
Theod. Simon: Die Gehirnerweichung der Jerren (Dementia paralytica), Hamburg: Wilh Manke.
L. Meyer: Archiv für Psychiatrie Bd. 3, Heft. 1 and 2.
Hugnenin: Archiv für Psychiatrie Bd. 3, Heft. 3.
Obermeier: Archiv für Psychiatrie Bd. 4, Heft 1.
Tigges: Allgemeine Zeitschrift fur Psychiatrie Bd. 29, Heft. 2.
Rabenau: Archiv für Psychiatrie Bd. 4, Heft 2.

Digitized by Google

In gray degeneration, Türk* distinguishes between a gray degeneration without, with only a small and with an extensive occurrence of granule cells, and maintains no necessary connection between these two lesions. Theod. Simon asserts with great positiveness, that the granule-cells myelitis cannot be regarded as its beginning state, and that it may produce itself the most marked symptoms of paralysis, without undergoing a metamorphosis into gray degeneration.

The former assumption (Türk) that the whole process of transformation of tissue elements into granule cells is only to be regarded as a slowly progressive one could likewise not be ascertained. On the contrary in all those cases, where they undoubtedly proved fatal, the changes occurred most rapidly, as in fatty metamorphosis in general.

In a case of embolism of one of the larger cerebral arteries of only three day's duration, the smaller vessels and capillaries were found extensively involved by accumulations of these cells. Similar very acute cases have been observed by Voisin,† by Huguenin,‡ and as above shown in plates, and these latter have presented an excellent occasion for the study in detail of the development of granule-cells.

The drawings and the description given by Voisin are, however, lacking in correctness and distinction, while those of Huguenin could only, in most of the principal parts, be confirmed by our own investigations, before we had the opportunity of noticing the same.

1. The oblong nuclei of the fusiform cells of the capillaries are transformed into granule-cells.

Of the cell-elements of the vascular system the nuclei of the smallest capillaries seem, in all cases, first affected. The nucleus loses its smooth, shining appearance, swells up, beginning at the outer border, first to an oviform, sometimes irregular shape granular body, in which often two or three small spherical nucleoli are distinguished. In a little further advanced stage two or three of these bodies formed by division of the first one, fill up nearly the whole space of the mother cell, distending its membrane, which soon entirely disappears, and rows on each side of six, eight or more. dark granulated globules, here and there showing between

* Türk: Wienar Academie Berichte Juni 1856.
† Voisin: Association Francaise. Bordeaux, 1872.
‡ Archiv fur Psychiatrie, Bd. 3, Heft. 3.

Digitized by Google

them the remains of an unaltered cell, mark the course of the former capillary duct.

2. The nuclei of the cells of the adventitia of the capillaries are transformed into granule-cells.

These transformations of the fine and delicate involucrum which surrounds the larger capillaries of the nervous centers, exhibit somewhat different features from those above described. An accumulation of a grumous granular matter first takes place around the nuclei. The nucleus entirely involved by these granules disappears, and a granule cell, sometimes of considerable size, is formed. What part the nucleus takes, however, in the process of multiplication of these cells, has not yet been determined. But soon they appear multiplied by division, and the new accumulations form in the most advanced stages large oval masses of granule-cells, which involve entirely the unaltered, though apparently compressed inner space of the capillary vessel. Some of these exhibit, soon after reaching this state, an atheromatous condition; the outlines of the cells become indistinct and a crystalline fatty mass is formed.

3. The lymphatic elements of the adventitia of the vessels are transformed into granule-cells.

These belong to the most common and most extensive ones. The formation of the cells occur in the same manner as in the adventitious elements of the capillaries, by accumulation of granular bodies which multiply by division.

4. The nuclei of the muscular coat of the vessels are transformed into granule-cells.

The history of these transformations has recently been brought within our observation in a case of melancholia connected with phthisis. According to Huguenin, in an acute case, after removing the degenerated adventitious parts, the outlines of the muscular fibres disappear, the transversely situated nuclei are enlarged, become opaque and of a grumous and granular structure, while the whole vessel itself perishes.

5. The nuclei of the neuroglia are transformed into granule-cells.

The nuclei are enlarged, the protoplasm appears contracted, opaque and of a darker color than usual. In further advanced stages it is divided into two, three or more granular conglomerations, which afterwards separate, forming as many single globules.

6. The spindle-shaped ganglion-cells of the inner layer of the

Digitized by Google

cortes of the convolutions, and the larger pyramidal cells, are transformed into granule-cells.

The process in the transformation of the smaller ganglion-cells is much like that of the nuclei of the neuroglia. The pyramidal-cells appear first as puffed out, the protoplasm is formed into vesicles, like small oil globules, surrounding the nuclei. The nucleus loses its fine punctured appearance, and seems divided by the contraction of its contents into a translucent part which often contains the opaque looking nucleolus, and into a grumous mass filling out the other half. In further advanced stages the whole nucleus seems to form one large-sized granule-cell, sometimes with irregular outlines, the outer part of the cell and the processes are then shrivelled.

In all instances, as will be seen, a necrotic decay of the elements is the general feature of these changes, apparently produced by a sudden and continued lack of nutrition. The principally affected regions are always softened, often intermingled with lymphatic elements, which, very probably, play an important role in the propagation of these lesions.

The following cases, with the accompanying plates, will serve to illustrate the pathological changes described. A number of plates are referred to in the article, which are not presented here; but we have given sufficient to fairly represent the morbid changes.

CASE 1. *Chronic Mania.*—Man; age sixty-two; had been insane some years; entertained delusions that his friends had robbed him and entered into conspiracy to get possession of his property. Memory was seriously impaired; would forget business transactions from day to day; became miserly in his habits; hoarded up articles which had been cast away as worthless; charged neighbors with having stolen his watch; was untruthful and feeble in mind. A short time before admission was disturbed by a law suit, which had been entered against him. At the trial was excited and talkative, and wanted to address the jury, and talked in an irrelevant and incoherent manner; after this became more disturbed, lost sleep and appetite, and emaciated rapidly; he soon was maniacal, noisy, profane, obscene in speech, and resisted care. In this condition he was brought to the asylum. On the way he was destructive of clothing, broke the glass in the car window and cut his hand severely; was thin in flesh and feeble. He continued noisy and maniacal, gradually failed, and died a week after admission.

Digitized by Google

Autopsy.—Head.—Dura matter slightly adherent to arachnoid, considerable sub-arachnoid effusion; left lateral sinus plugged with a highly organized fibrinous clot, two inches in length; right sinus contained a white clot not so highly organized; membranes easily detached; convolutions softened in places and tissues pulled away with membranes. Weight of encephalon fifty ounces.

Thorax.—Right lung adherent over entire posterior surface and lower lobe emphysematous; left lung also adherent and emphysematous.

Abdomen.—Liver fatty; mesenteric glands enlarged and filled with tuberculous matter.

The microscopic examinations demonstrated the most striking characteristics of the alterations, which pervaded the whole encephalon. The nerve element appeared very much marked by a fine dark granular matter, not dissolved by ether, and becoming more distinct in its granular composition when treated by acetic acid. The connective fibres and nuclei could be made out in the middle of the substance, but the more conspicuous character of the alterations is the presence of large ovoid or spherical products, changing in appearance from a finely granular pellucid mass to a semi-gelatinous or diffluent fluid.

These morbid products are surrounded by condensed meshes of connective fibres, forming a true cystic cavity, from which the contents may be easily removed. In their solid form these products are very friable. The appearance and character in some specimens indicates that the process of necrobiosis, which had taken place in the circumscribed spot, occupied by the product here described, had reached an advanced fluid stage preliminary to the reabsorption of the cystic contents observed at the later period of the degenerations, when the true lacunæ replaced the pre-existing morbid contents. We are led to believe, upon comparing the structural changes of the nervous tissues here described, with the similar ones which are displayed in chronic cases of mania and in dementia, that in this instance the disease has reached a chronic stage.

In both cases the morbid process determined a proliferation or hyperplasia of the fibres of the neuroglia, but in none of the instances which have fallen under our observation have we noticed the proliferation of nuclei which constitutes an important special character of the sclerotic degeneration, nor have we observed the distension of the lymphatic sheath which surrounds the vessel by the collection therein of fatty globules which are also conspicuous

Digitized by Google

changes in sclerosis. Lastly, this ultimate consecutive atrophic degeneration of the nerve elements, met with in the white and gray substance of the brain, does not assume the distinct fatty nature of that proper to a sclerosis. And for all these reasons we believe that the structural alteration of the nervous tissues here considered, presents sufficient characters to constitute a separate and distinct lesion.

The photograph A 1, exhibits in a section through the third left frontal convolution, the degeneration in a most advanced stage. The masses are distinctly isolated from the surrounding tissue, which has partly undergone slightly fatty changes. The concentric layers of connective fibres which form the cavity, in which the masses are contained, appear distinctly around the mass, whose gelatinous semi-fluid aspect contrasts strongly with the granular structure of the rest of the specimen.

CASE 2. *Melancholia*, (*Chronic.*) — Woman; age fifty-seven; married; eight children; mother was insane; no history of previous physical condition or the exciting cause of the insanity was obtained. Patient had been melancholic for some three years; she then improved in health, became quiet, and friends indulged the hope that she was convalescing. Two months before admission she became talkative, noisy, incoherent and destructive of clothing. She refused food, lost flesh and strength, and when brought to the asylum was pale, feeble and anæmic. She took food freely, but continued maniacal; was emaciated, had diarrhœa, and gradually failed, and died in eight months.

Autopsy.—General atrophy of whole muscular system.

Head.—Skull-cap, dura mater and brain, normal to ocular examination.

Spinal Cord.—Considerable atrophy of anterior roots.

Thorax.—Patches of acute pleurisy with exudation of plastic lymph at posterior part of left lung. Induration with contraction of both apices.

Heart.—Pericardium normal; slight narrowing of mitral valve.

Abdomen.—Intestines were distended with gas, and there was marked contraction of descending colon for the space of three inches; kidneys much congested; other viscera normal.

The photograph shows in a section through the medulla, the character of the degeneration, demonstrated in the different stages of development throughout the nervous centers. Small or larger well defined semi-transparent spots of a granular substance, reflect-

Digitized by Google

ing the light with brilliancy, but not tinged by carmine, and not soluble in ether, alcohol or chloroform, surrounded by a proliferation of connective fibres, indicates the earlier degrees of this alteration. In more advanced stages as represented in the photograph the mass reaches a semi-fluid condition. It should be remarked that this change, which may resemble a state of sclerosis, differs in its character from the condition described, which in no instance, as we are aware, leads to the complete separation of the morbid product within a well defined cavity, nor to the entire reabsorption of said encysted morbid products.

Case 3. *General Paresis.*—Man, age 29, single, salesman, not hereditary, accustomed to use of liquor and tobacco. Had always enjoyed good health till four years before admission, when he had an attack of paralysis of the right side; soon after this he had diphtheria, and suffered from the effects of an overdose of acetate of lead, which he was using as a gargle. After two years he apparently recovered, and continued well for two years. He then gave evidences of mental disturbance, claimed that he had been injured by being struck on the head, though friends had no knowledge of such an occurrence, and began to entertain extravagant delusions, talked of extensive purchases, was so unsteady in gait that he was turned away from the hotel, as he was thought to be intoxicated, ordered carriages and threatened to prosecute the man whom he said injured him. In a few days he became maniacal and unmanageable and was taken to jail. Was there noisy, and disturbed, and expressed the following delusions: that he had killed one hundred men, that he was conducting an enormous law suit, that he was President of the United States, Governor of New York, and was carrying on a large war. He was brought to the Asylum on the sixth day after his condition was recognized. He was then in good flesh, but presented the characteristic symptoms of general paresis. There was marked hesitancy of speech, and unsteadiness of gait, tremor of the tongue, and though he could protrude it, it was only by resting it on the lower lip. The instant it was raised, it was involuntarily drawn back. There was also tremor of the fingers from lack of co-ordination of muscular movement. His delusions of wealth were prominent, and he asserted himself to be worth $100,000, and his intended wife $250,000. In about two months he had the first paretic convulsion, which was followed by greater disturbance of speech. After this he improved in both physical and mental condition, and for some six months had such a

Digitized by Google

remission of symptoms that the presence of the disease could only have been diagnosticated by a knowledge of the previous state. He manifested no delusions, but had an appreciation of his condition and of the character of his disease; said to friends who visited him that he knew he was doomed, that he had general paresis, and had seen others, and knew what his fate would be, that he proposed to stay in the Asylum and die where he would be taken care of. The paretic epileptiform seizures then returned, and the patient became maniacal. From this state he never rallied, but gradually failed, and died paralyzed, in fourteen months, about twenty-six months from date of admission.

Autopsy—Thirteen hours after death. Rigor mortis marked. Body emaciated; cutaneous sloughs on hands, elbow, ankle and back of the body.

Head.—Skull-cap normal; dura mater adherent to skull, thickened, especially along the longitudinal sinus; arachnoid raised in blister-like sacs over both hemispheres by a clear serum; pia mater closely adherent to the cerebral convolutions. Brain atrophied, indurated, ventricles filled with a clear serum. In removing the brain, three and one-half ounces of blood and serum escaped.

Spinal Cord.—Dura thick, pale, at cervical parts, adherent to pia; the whole sac of the dura below filled with serum. Pia opaque, spinal marrow flattened, apparently diminished; the cervical parts flattened on transverse section, normal in appearance; gray centers well marked; *posterior* roots normal; the *anterior* cervical roots remarkably diminished, of a reddish color.

The gluteus maximus on both sides partly destroyed by abscesses and infiltrated with pus.

Thorax.—Lungs collapsed, otherwise normal. Heart small, normal.

Abdomen.—Liver friable and fatty, spleen and kidneys normal.

On microscopic examination the anterior roots of the cervical nerves were found in a state of advanced fatty degeneration, the axis of the fibres manifold, ruptured; connective tissue fibres remarkably increased, extensive accumulations of granule-cells in the post lateral columns and along the vessels.

Medulla oblongata very small in diameter, the pyramids small and indurated, olivary bodies normal in appearance, cells of the corpora dentata well pronounced.

The roots of the hypoglossus highly atrophied, its fibrillous structure barely marked and visible, the large ganglionic centers of the

Digitized by Google

hypoglossus near the septum very small in number and throughout in a state of pigmentary degeneration. Roots of the vagus and facialis nearly normal in appearance, only a slight pigmentary degeneration of the centers.

Sections of the third anterior convolution on both sides of the brain showed a general atrophy of the nerve elements. The pyramidal cells diminished in number, though some of them exhibited unusually large dimensions, especially in the parietal convolutions of the left hemisphere. The spindle-shaped cells of the inner layer frequently in a state of granular degeneration. Numerous deposits of fatty and crystalline masses in the gray substance and of irregular proteinous bodies between the fibres of the white substance of the convolutions.

The vascular system exhibited extensive degenerations. The walls of the smaller vessels were frequently found thickened, swelled and infiltrated by a homogeneous hyaline substance. In other cases the larger capillaries showed themselves manifold, curved, distending the adventitious membrane between the curves and giving rise to accumulations of lymphatic elements, fatty granules and pigment bodies; others were surrounded by a dense layer of nuclei, surpassing three or four times the inner space of the vessel, and others involved by cell-bodies of a spongy-like structure.

Photograph plate, C 1, shows a section through a part of the pons Varolii near the roots of the trigeminus, with numerous deposits of proteinous bodies between its fibres and the surrounding tissue.

Plate C 2, section through a part of the medulla near the raphé with colloid bodies.

CASE 4. *Epilepsy with Dementia.*— Man; age nineteen; good habits. Had epilepsy for nine years prior to admission. Nothing further was known of his history. His mind was feeble; he did not converse or manifest any interest in his condition or surroundings. While in the asylum, he had almost daily seizures, lost control of the movement of his bowels and bladder, retained his bed most of the time, and refused all food except bread and milk, and this he took freely. After eighteen months he died in a fit.

Autopsy.—Head.—Dura-mater thickened, and several bony plates were found on inner surface, two of which had sharp projections. They were attached near the longitudinal sinus, one on either side. The largest was one and one-quarter inches in length, and one-half inch in width. The longest projection was about three-sixteenths of

Digitized by Google

an inch, and impinged on the pia-mater, but had not lacerated it. The interior surface of all the plates was roughened and ridged. They were held in position by fibrous bands attached to the dura-mater. The pia-mater was much engorged. Anteriorly, there were points of extravasated blood beneath the membranes.

Thorax.—There were several cicatrices, a small abscess, and tuberculous deposits in apex of left lung; right lung normal; heart enlarged, soft and fatty.

Abdomen.—Liver normal; kidneys congested and filled with blood. A large amount of bloody serum escaped from spinal canal, and the whole substance of cord was deeply congested.

The microscopical examination demonstrated in the medulla, in the olivary bodies and in the third left anterior convolution, as well as in other sections of the brain, very fine, fatty, granular degenerations, interspersed with amyloid corpuscles.

Photograph D 1, exhibits a section through the spinal cord, opposite first cervical vertebra, showing portions of the posterior columns. The multipolar cells are filled with pigment. The granular amorphous matter is considerably increased, and mixed with very fine, transparent fibrils of connective tissue and very small connective nuclei. This alteration is identical with that described by Dr. Echeverria.*

D 2. Section through the middle cervical ganglion of the sympathetic showing the same fuscous or pigment degeneration of the ganglion-cells, with a very marked hypertrophied condition of the connective tissue.

CASE 5. *Sub-Acute Mania*, (*Syphilis.*)—Man; age twenty-five; intemperate in his habits. Father and mother had for years kept a low drinking saloon and house of ill-fame, and both had served sentences in state prison as receivers of stolen goods. After their release, the husband obtained a divorce from his wife and lived with another woman, to whom he claimed to be married. With her he resumed his former occupation. The place was well known to the police as a resort of criminals and abandoned characters. The patient had received a common education, and been employed as clerk in various offices, and on the canal. From his own statement he had led a dissolute life, and had contracted venereal disease, which his condition, on admission, verified. His health having failed, he came home, boarded with his father, and engaged in the insurance business, but without success. He continued his evil asso-

* On Epilepsy, drawn by him, pages 86 and 87, plate 5.

Digitized by Google

ciations, and gave himself up largely to drinking and dissipation. During this time he often threatened the life of his father and stepmother, secluded himself in his room, and shortly before admission had symptoms of fever, was described as delirious, out of bed and around the house with only his underclothes on, drank freely of liquor, became abusive, threatening and violent. The police were called in at times to quell the disturbances. One day a boarder in the house hearing a noise in the room occupied by patient, went up stairs and found him seated at the head, with a pistol in his hand. The patient discharged it at him, and the bullet passed through the right forearm. The injured man retired and soon after heard three pistol shots fired in quick succession. The police, summoned by the noise, went into the patient's room and found the stepmother lying on the floor. A ball had penetrated the chest, passed through the right lung, removed a portion of the wall of the aorta and lodged in the left lung. The patient was seated upon the side of the bed reloading the pistol. He was removed to the jail, and on the inquest gave a contradictory, confused statement of the affair; said: "the woman was trying to get into the room to kill me; I cocked the pistol when I saw she was going to kill me; I shot the bullet and it went plumb through her heart." He also made other statements giving a different version of the affair. An investigation was made before the county judge; he was declared insane and sent to the asylum. On admission gave a very long history of his case, justified the shooting on the ground "that his stepmother had attempted to poison him, and that God had ordered him to send her to hell without a moment's warning;" that he had shot the man "because he had brought him bad water to drink." He was thin in flesh; conjunctivæ pearly, tongue heavily coated, features sharp and skin pale. He had two sinuses opening into palm of left hand, one between ring and fourth finger of right hand, one on left foot near big toe, and one in same position on right foot. For the first few days he was about the ward, talking incessantly, maintaining his assertions as to the killing, and its justification, then became more feeble; was complaining, fault-finding, whining in speech and childish, asked for changes in room, in bed, in diet; ate and slept well, though he asserted he did not. After some two weeks there appeared an extensive swelling of left leg and foot, resembling, somewhat, phlegmonous erysipelas. The skin was raised in large patches, and blood and serum were effused beneath. There were some ten or more sinuses in region of buttocks, dis-

Digitized by Google

charging a purulent serum. The patient grew more feeble, and was evidently failing. Three days afterwards, at about midnight, he had an extensive hæmorrhage; when physicians reached the bedside the bleeding had ceased. He was pale and cold, complained of chilliness, and teeth were chattering. Under the buttocks was a large pool of blood, and the abdomen was swollen and painful. He seemed perfectly conscious that he was sinking, and died at six o'clock in the morning.

While in the asylum no sign whatever of aphasia or amnesia was displayed by the patient. He had delusions, circumscribed to a limited range of ideas, was very restless but quite talkative and capable of giving a clear account of circumstances around him, and was conscious of his condition up to the time of death.

Autopsy.—Abdomen tympanitic. Left leg much swollen by infiltration of serum and large ulcer eight by four inches. Another ulcer extended over arch of left foot toward internal malleolus. A deep sinus existed near head of left fibula. On the right were two sinuses, one opening between great and second toes, and another more superficial near ankle joint. On right knee was an inflamed spot two inches in diameter, the skin was elevated by dark-colored effusion beneath. A deep sinus opened between thumb and index finger of left hand, and another between ring and little finger of same hand. There was also one corresponding to this on the right hand. The sinuses opening in sacral and gluteal region, some ten in number, were found to communicate with each other, and formed a common abscess. Some of them were filled with thick yellow pus, and others with partly disorganized blood-clots.

Head.—Calvarium thin and soft; slight adhesions between dura-mater and arachnoid; small amount of serous effusion under arachnoid; more abundant about medulla and base of brain. Brain tissue pale.

Thorax.—Small quantity of serum in pleuritic cavities. Lower lobe of left lung hepatized. Pericardial sac distended with about three ounces of a greenish fluid.

Heart.—Substance pale; right ventricle filled with frothy, watery blood; left ventricle empty; valves normal.

Abdomen.—Whole cavity distended with pus and serum, of a greenish color. Omentum firmly bound to intestines, and these to each other by adhesions. On attempting to remove the omentum the intestines were torn through. The ileum was gangrenous near cæcal valve, and other portions of it were deeply congested and

Digitized by Google

softened. Transverse colon highly inflamed; mesentery deeply congested, and the gland much enlarged and filled with cheesy material. Peyer's patches enlarged and ulcerated; pelvic cavity filled with a very offensive yellow pus; pancreas soft and of a yellow color; spleen contracted. Both kidneys were enlarged and capsules easily detached.

Liver.—Convex surface covered with a thin layer of pus and lymph; tissue pale and fatty.

Microscopic examination of liver showed extensive fatty degeneration. In fresh specimens, treated with ether, fat was dissolved.

The tubuli-uriniferi were enlarged and contained either an entire cast, or a portion of one, and transverse sections showed them choked up with debris of epithelieum. Connective tissue was granular, particularly about the Malpighian bodies. The pancreas was in a state of fatty degeneration.

The microscopical examination evidenced that as well as every viscera of the individual, the nervous centers, also, had undergone the fatty degeneration observable in constitutional syphilis.

The contrast between the fatty degeneration and that which seems to be an attendant of insanity was very marked in this case from the respective reaction of each morbid product.

Plate E 1, shows a section through the left frontal convolution at the union of the gray and white substances. The dark outline of the numerous globules represented have a very brilliant and transparent appearance in the specimen, since they are of a fatty nature.

Plate E 2. Section of the medulla across the olivary bodies. One of the large masses is shown split up and others developed in the midst of thick meshes of fibres and encroaching upon the adjacent nerve fibres. The same condition existed in regard to the posterior nerve roots of the spinal cord.

Case 6. *Acute Mania.*—Woman, age 36; widow. Patient was usually a healthy woman, but suffered great anxiety from domestic affliction. Within a few years one child was drowned and her husband was killed by lightning. About two months before coming to the asylum became melancholic and depressed; was suspicious, said people were conspiring against her. She soon became cross and irritable, was profane, obscene, noisy and maniacal. The following was her condition on admission: Pale and anæmic, pulse rapid and feeble, skin cold, complained of pain over upper portion of spine, and headache; pressed her head with both hands, said it would

Digitized by Google

burst. She continued noisy and was too incoherent to be understood, was restless, appetite was variable and she slept irregularly. Two days previous to death she became more disturbed, threw herself about in bed, complained of the intense pain in head, and opposed care. She suddenly sank and died.

Autopsy.—Body well nourished. *Head*—Skull-cap normal; adhesions between the membranes. Pia-mater opaque, congested, distended with blood over the whole surface of the brain and between the convolutions along the longitudinal sinus, raised by slight effusion of serum. After removing the brain, about two ounces of serum remained in skull. Brain substance softened. The gray matter of the convolutions of both cerebrum and cerebellum reddish in appearance; gray degeneration of the pons Varolii and medulla. The smaller nerve cells of the outer layers of the gray substance of the convolutions of the hemispheres and the Sylvian fissure and anterior convolutions were normal in appearance, but most of the larger cells of the subjacent layer, especially of the hemispheres and the Sylvian fissures, were puffed out and remarkably enlarged, their contents forming larger globules distributed in half circles around the enlarged transparent nuclei, the nucleoli of which were only very rarely found pronounced. In some specimens taken from the convolutions of the fissure of Sylvius, no evidence of an outline of the cells could be detected. Weight of brain, 42 ounces.

Thorax. Lungs—The lower lobes slightly congested, otherwise normal; heart, normal.

Abdomen. Liver—Normal in size, friable and fatty, the hepatic cells were entirely filled with oil globules, the vessels were atrophied and surrounded by dark pigment cells. Kidneys, normal. Spleen nearly twice the normal size. Intestines: the transverse colon crossing the peritoneum at about the middle line; small intestines slightly congested in several spots; urinary bladder empty and normal.

Digitized by Google

ARTICLE XII.

Contributions to the Pathology of Tumors of the Eyeball, with macroscopic and microscopic demonstrations. By Dr. HERMAN KNAPP, of New York.

Five years ago, when a stranger in this country, I had the honor of being invited to the floor of this Society, and of presenting some remarks on intra-ocular tumors. What I then knew on this subject I had shortly before published in a German treatise of which an English translation was made soon after. Since that time I had abundant opportunity to continue those studies, as my own private and hospital practice furnished me with valuable material, but for some of the most instructive observations I am indebted to my friends in this country and in England, and even to some gentlemen whom I have never seen. This spirit of liberality and kindness gave me great pleasure, and, I assure you, was deeply appreciated. It showed me that professional courtesy, as practiced by American physicians, means more than kind words.

I do not here purpose to speak at length on the clinical symptoms, nor on the minute pathological conditions of the ocular tumors, but would simply beg leave to place before you a number of macroscopic and microscopic preparations, illustrating the principal features of the pseudoplasm which are met with in the eye, and I will say so much in explanation as seems new and of general interest.

The first specimen I place before you is an *Episcleral Melano-Sarcoma*. It was first noticed, six years ago, as a blackish nodule on the inner side of the sclerotic, near the corneal margin. It grew slowly, and was removed two years later. It repullulated, and was again removed two years since. Again it returned, occupied, when I first saw it, last spring, the inner and upper ciliary region of the sclerotic, and overlapped the cornea. The interior of the eye appeared unaffected. I enucleated the eyeball, but soon a suspicious-looking mass made its appearance in the depth of the orbit, on account of which, without hesitation, I emptied the whole socket of the eye. A fearful hæmorrhage ensued which I arrested by plugging the orbit with sponges, placing other sponges on the closed lids, and keeping them in position by a tight flannel bandage. The patient recovered; his orbit is empty, the eyelids are retracted, he cannot wear an artificial eye, but he feels well in every other respect,

Digitized by Google

and it seems that the pseudoplasm is eradicated. The tumor was a melano-sarcoma, springing from the sclero-corneal juncture, having its roots in the outer layers of the sclerotic and cornea without penetrating into the eyeball. There are only very few cases of this kind on record. I showed the specimen in the New York Pathological Society last summer, and was pleased to see that the report of it, in the Medical Record, induced one of our western confréres, Dr. H. C. Markham, of Dubuque, Iowa, to publish a similar case which had come under his care, and was successfully operated on.*

Of the second case, I can show microscopic specimens only. It is a *Melano-Sarcoma of the Iris.* For the specimen I am indebted to Dr. Argyll Robertson, of Edinburgh. It first appeared as a small brown nodule on the upper part of the anterior surface of the iris, grew slowly and had reached the size of a small pea when the patient first sought medical help. Several smaller nodules occupied the lower portions of the iris. The eye was blind. A deep glaucomatous excavation was the only alteration in its interior. The other eye was healthy. The diseased eye was removed by Dr. Robertson two and a-half years ago, and the patient has been well ever since.

The pseudoplasm proved to be a very vascular melano-sarcoma. The upper (largest) and the middle-sized tumors were in immediate contact with the uveal layer. But, besides these tumors, there were on the lower half of the anterior surface of the iris a great many roundish and circumscribed, as well as irregular and extended, elevations, showing under the microscope the structure of a round-celled sarcoma, the same as was found in the larger growths. The origin of all the smaller elevations could be distinctly traced to the anterior layer of the iris. Their distribution over the lower part of the iris suggests the idea that they were occasioned by the dissemination of detached particles from the primary, upper tumor. Previous to this there was only one similar case on record, by Von Graefe and Hirschberg. It, too, demonstrated that sarcoma may be limited to the iris, but, if unchecked, it will destroy sight by the advent of glaucoma. These clinical and anatomical investigations have begun to bear fruit: Dr. Kipp, of Newark, N. J., recently removed a sarcoma of the iris before sight had been impaired. The result was a perfect success, and, no doubt, a triumph of surgery. A malignant growth is removed from the interior of the eye, the eye recovers its sight, is not more mutilated than by an iridectomy, and death, the

* See Med. Rec. 1874, p. 23.

Digitized by Google

inevitable termination of an intra-ocular sarcoma when left alone, averted.

Four weeks ago a case of iris sarcoma came under my own care. It was already in the second stage—blindness from glaucoma. I removed the growth, after-hæmorrhage ensued, but the eye-ball was preserved.

Two months ago, Dr. A. Robertson, of Edinburgh, wrote me that another case of iris sarcoma had come to his notice, but that the extirpation of the eye had been refused, as the patient could still see with that eye, while the other was blind. On the strength of the anatomical examination of his previous case, which showed that the pseudoplasm was limited to the iris, and in view of Dr. Kipp's case, I advised Dr. R. to remove the growth but preserve the eye. You see, here is a new acquisition to ophthalmic surgery.

The next specimen I present is unique, and, to judge from its nature, will probably not so soon be observed again. It is an *intra-ocular enchondroma*, which, after twenty-two years' standing, was removed by Dr. Chisolm, of Baltimore, Md. The patient died eleven days after the operation from after-hæmorrhage, which could not be arrested either by tamponing or the ligature of the common carotid artery. The growth, which Dr. C. was so kind as to send me for examination, proved to be a well-defined specimen of hyaline enchondroma. New formation of cartilage had never before been noticed in the eye. The specimen under consideration being the size of a fist, and having destroyed all the inner membranes of the eye, does not admit of inquiries into the origin of the growth, but as chondromata in general mostly arise either from bones or fibrous membranes, it is most probable that this specimen sprang from the inner surface of the sclerotic.

For the sake of completeness I may be allowed to pass round, without comment, some specimens of *pigmented* and *unpigmented sarcomata* which show nothing new; but I beg to make some remarks on two specimens, which I owe to the kindness of Dr. E. Williams, of Cincinnati, and which discover a mode of propagation hitherto unknown in choroidal sarcoma. In both specimens the tumor had originated in the posterior part of the choroid, caused detachment of the retina, surrounded the corrugated retina at its emergence from the disk, converted its substance into sarcoma structure, produced general thickening of the retina and some nodular swellings, the surface of which was uneven, bare, and in some places exulcerated. On one side of the eye, opposite the

Digitized by Google

tumor, there lay on the inner surface of the choroid a number of small, round tumors, like millet-seeds. Examined with the microscope they manifested themselves as isolated diminutive sarcoma tumors, some of which were only clusters of cells upon and under the epithelial layer. The choroid was otherwise normal. Only one explanation as to the origin of these minute tumors seems admissible: they resulted from particles fallen from the detached and degenerated retina through the subretinal fluid on the healthy choroid, where they took root and proliferated. The mode of propagation of sarcoma in these cases, therefore, is as follows: A primary choroidal sarcoma causes detachment of, and encroaches upon, the retina, converts the tissue of the retina into sarcoma substance, from which particles are detached and strown as germs upon healthy portions of the choroid, where they produce secondary tumors. This mode of propagation—Virchow's seminium—was described by me six years since for glioma of the retina. It seems to play an important part in the eye, as the humors of the globe are apt to facilitate the dissemination of germs from one place to the other.

The last specimens I beg to exhibit are instances of *glioma, or encephaloid cancer of the retina.* Besides some older specimens which I pass round, there are two new ones of considerable interest. In the first, one eye was extirpated where the pseudoplasm had left the globe and extended into the orbit. The other eye was soon affected, grew immensely, and soft tumors developed on various parts of the head and on the lower jaw. The child died of exhaustion. The eyes were destroyed by the encephaloid cancer. The tumors on the head and jaw were of the same nature. They did not, however, originate in the diploï of the bone, as in a case I previously observed and described, but proceeded from the periosteum, caused depressions in the bones, and were pervaded by osteophytes. The same kind of soft, vascular, encephaloid tumors was found on the outer surface of the dura-mater. This case, therefore, is another of those rare instances where glioma of the retina produces metastatic tumors.

The last case I may be allowed to present is one of glioma of the retina, in a child, whose eye was taken out a few months ago by Dr. J. Thompson, of Indianapolis, and kindly sent me for examination. The specimen is distinguished by the clearness with which the origin of the pseudoplasm can be traced to the inner granular layer of the retina. Clinically, it is distinguished by the novel fea-

Digitized by Google

ture of a family predisposition to retinal glioma; two brothers having three children, and a sister two, who all suffered and—with the exception of the child from whom the specimen was taken—died from glioma retinæ. The examination showed that the pseudoplasm was still limited to the retina, and it is, therefore, probable that the child will live. I may add that a child, from whom I removed a gliomatous eye four years since, is living and free from any signs of a relapse, confirming the supposition that encephaloid cancer in its earlier stages is a local, though eminently malignant, disease.

Would you in conclusion allow me, Mr. President, to mention two objects in relation to the diagnosis of intra-ocular tumors, which is sometimes difficult. In the initial stage the tumors occasion no symptoms of irritation, and are commonly covered by the retina which completely hides them. In one such case I thrust a needle into the eye, tore the retina over the tumor, and a short time afterward, when the little hæmorrhage had disappeared, the tumor could be seen. Such an operation is justifiable in every respect; it is not dangerous, and, in case the disease proves to be no tumor, but simple detachment of the retina, it may have a curative effect on the detachment.

In some instances the initial stage of tumors cannot be distinguished from circumscribed exudations. In such cases it is of importance to watch the progress of the swelling, which can be done with a high degree of accuracy by the ophthalmoscope. To every state of refraction corresponds a certain length of the ocular axis. If we ascertain the refraction corresponding to the base and crest of a swelling, we can determine its height, and by subsequent measurements ascertain its increase or decrease. To do this conveniently and satisfactorily, ophthalmoscopes have been constructed which admit of a sufficient number of auxiliary lenses being placed behind the mirror to determine the location of any parts within the eye. I may be allowed to place before you two such ophthalmoscopes; the one with a double disc, containing the most extensive collection of auxiliary lenses yet used in any ophthalmoscope, and the other a single disc ophthalmoscope containing twenty-two auxiliary glasses, which is sufficient for almost all practical purposes.

Digitized by Google

ARTICLE XIII.

The Relations of Syphilis to Aural Disease. By D. B. ST. JOHN ROOSA, M.D., Professor of the Diseases of the Eye and Ear in the University of the city of New York, Surgeon to the Manhattan Eye and Ear Hospital.

It often becomes an interesting therapeutical question as to how much the poison of syphilis has to do with a given case of an affection of the organs of special sense. The ear, like other parts of the body, may and does suffer from the secondary or constitutional effects of syphilis, but there are no pathognomonic evidences, no *per se* marks, by which we may distinguish a syphilitic aural disease from any other. A membrana tympani, which has become sunken and opaque, and consequently less capable of conducting sound, from an inflammation that has been produced or modified by syphilis, looks exactly like a drum-head that has undergone the same changes from an inflammation in which syphilis plays no part. We now know that even in iritis, that is caused by syphilis, there are no pathognomonic evidences, nor in neuritis optica, so that the advocates of the pathognomonic evidences of these poisons have been driven into the last ditch of argument to support their views. Even the "nodular collections of inflammatory products" seen in iritis *gummy tumors*, although they may occur with an undoubted syphilitic basis, cannot be distinguished from simple inflammatory products.*

The affections of the outer ear, that are produced by syphilis, are mainly the extension of the eruptions that occurs in syphilis, to the auricle, and the integumentary lining of the auditory canal, and demand no especial notice. Stöhr, of Würzburg, has observed fourteen cases of condylomata in the external auditory canal, occurring, in all but two exceptions, in connection with condylomatous formations on the genitals, in the axillæ, under the breasts and between the toes.†

Exostoses and hyperostoses of the external auditory passage were formerly supposed to be the result of a syphilitic or gouty diathesis, but my own published cases have disproved this view of Toynbee, and shown that they may and do occur without the existence of any diathesis, but simply as the result of local causes.‡

* Virchow quoted by Stellwag. Treatise on the Eye, 1873, p. 244.

† Archiv fur Ohnenheilkunde. Bd., IV, s. 255.

‡ Treatise on the Ear, p. 400, et seq.

Digitized by Google

The affections of the middle ear, that is, of the tympanic cavity and eustachian tube, are the most common of all that occur in the organ of hearing, during the course of syphilis, just as they are most frequent of all the affections of the ear from whatever cause. The snuffles of the infant who is poisoned by inherited syphilis, or, in other words, its naso-pharyngeal catarrh, extends to the tympanic cavity and becomes a catarrh of the middle ear, resulting in adhesions and thickenings of the mucous membrane, perhaps, also, in an inflammation of the bone itself. This process is usually seen in connection with other manifestations of syphilis, and the teeth assume the shape first described by Mr. Hutchinson. A timely use of Politzer's method of inflation of the middle ear, in connection with the general treatment, will probably prevent the occurrence of nearly complete deafness, which must occur if this catarrhal process be allowed to go on unchecked, and finally involve the labyrinth. Mr. Hutchinson, in his able and standard work,* inclines to the belief that the deafness of syphilitic children "is due either to disease of the nerve itself or to some changes in the non-accessible parts of the auditory apparatus." I think his own cases show indisputably that whatever they may have become, they chiefly *began* in the middle ear, a conclusion which corresponds with the results of my own observations.

We have now in the tuning fork a tolerably satisfactory means of making a differential diagnosis, especially when one ear is alone affected, or where it is much more so than the other. As is well known, the vibrations of a tuning fork, placed on the head, are better distinguished by an ear which is occluded by inflammatory products or foreign bodies in the external or middle ear, than by one that is free from any such obstruction to the passage out of the sound conveyed to the nerve. This is easily demonstrated by closing one ear with the finger or cotton-wool, and then applying the handle of a vibrating tuning fork to the forehead.

A syphilitic naso-pharyngeal catarrh, occurring in adults, may also extend to the tympanic cavity, and produce acute inflammation, which is attended by the same pain, and other symptoms that are produced by catarrhal inflammation uncomplicated by syphilis. Here, also, prompt local treatment, blood-letting by means of leeches, gargling, inflation of the ear, will also be required, in addition to general treatment. Neuralgia of the facial nerve, in its passage through the cavity of the tympanum, by the fallopian canal, causing

* Syphilitic Diseases of the Eye and Ear. London, 1863, p. 182.

Digitized by Google

a severe otalgia, may occur in the course of syphilis. I have such a case. It may be relieved by the use of iodide of potassium. Otalgia is a very rare disease, and seems to be chiefly caused by caries of the teeth, and by a syphilitic disease of the nerve. Insidious and chronic affections of the tympanic cavity, which are, perhaps as suggested by Schwartze of Halle, essentially an affection of the periosteum, sometimes occur in the course of secondary disease, without any marked symptom, except those of decided impairment of hearing and tinnitus aurium. They are very intractable.

Ulceration of the pharynx may extend to the eustachian tube, or its orifice, and possibly close it by cicatrization.

The pathology of the true affections of the auditory nerve, and its expansions into the vestibule, cochlea and semi-circular canals, is unfortunately very obscure. We know now, however, that we may have an affection of the auditory nerve occurring in connection with disease of the portio dura, and third nerves, which is probably caused by exudations upon or in these nerves. We may also probably have acute periostitis of the internal auditory canal, producing the most agonizing pain, profound deafness, and unsteadiness in gait. The use of mercurials and iodide of potassium, with local blood-letting, if promptly employed, will relieve the pain, and improve the hearing power, but the auditory nerve, especially its cochlear portion, will soon receive irreparable damage, if any pressure be exerted upon it by inflammatory products for any considerable time.

Of the other lesions, occurring in the nerve, and fortunately they are rare, in the present absence of accurate post-mortem investigations, we can only speculate, except to say, that bony growths, and atrophy of nerve fibres, have been found.

Digitized by Google

ARTICLE XIV.

Penetrating gun-shot wound of the Cranium, with recovery. By A. VAN DERVEER, M.D., of Albany.

Edson D. Bemis, corporal Co. E, 20th Massachusetts Vols., Æt. 25, was wounded at Antietam by a musket ball, which fractured severely the shaft of the left humerus. However, there was good union of the fracture, with slight angular displacement, and but little shortening. On May 6th, 1864, at the battle of the Wilderness, he received a second wound from a musket ball in the right iliac fossa. Extensive sloughing followed, but the wound ultimately healed, leaving a large cicatrix parallel with Poupart's ligament. At Hatcher's Run, Va., at about 3 P. M. on February 5th, 1865, he was again wounded. At the time when he received this wound the Second Army Corps was engaged in repelling an attack of the rebels. Being stationed at the extreme front when wounded, and the corps having been repulsed, he remained for a short time with the enemy, but was finally recovered on our forces becoming successful in their attack. He was brought into the hospital (1st div. second army corps) at 1 A. M. on the night of the 6th of February, being in an insensible condition.

Being immediately summoned I proceeded to examine the wound, and found that the ball had entered the brain about one and a half inches above the left eye, and two and a half inches forward of the left ear, fracturing both tables of the skull, passing into the substance of the brain in a direction upwards and backwards parallel with the longitudinal sinus, and to the depth of fully two inches. At the time brain matter was escaping from the wound, and the hæmorrhage was quite free. Respiration was very slow and performed with difficulty; the pulse counted forty; the right side was paralyzed. It was impossible to arouse him from his insensible condition. I considered the wound a mortal one, and after ordering the nurse to apply simple cold water dressings retired to my quarters. The next morning the bleeding had ceased, the pulse and respiration had somewhat improved, still he remained entirely unconscious, and anything said to him seemed perfectly unintelligible.

After making a thorough examination of the wound, passing my little finger to its full length into the opening, I determined to

Digitized by Google

attempt the extraction of the ball, which I was quite confident I could feel. My first attempt failed, but the second time I succeeded in grasping the ball with the small bullet forceps, and without much effort brought it away. I also removed, at the same time, four pieces of bone that had been depressed and carried in by the ball.

The operation was followed by little hæmorrhage, brain matter continuing to ooze from the wound for several days after. His condition improved at once, and his sufferings seemed greatly alleviated. He passed his urine soon after, in bed, in free quantity.

In a few days the right side was free from any symptoms of paralysis, and the patient swallowed with ease; the bowels moved, and, when desiring to pass urine, would manifest such symptoms as to attract the attention of the nurse, no longer wetting the bed.

Cold dressings were applied, and a circular sponge, which had been arranged for the purpose, absorbed all the pus that might collect just within the skull.

Beef tea and a light nutritious diet was prescribed. The patient remained in a very quiet condition for ten days, had no convulsions during this interval, and answered direct and indirect questions, but showed no desire to continue any conversation. About this time there was a very marked improvement in his condition, he began to converse readily, and there was no delirium in his sleep.

The discharge from the wound was very healthy in character, and from the position in which his head was placed had free exit. The ball (a conoidal musket-ball) which had been extracted was very much battered.

On the 28th of February he was able to walk about the ward, and on the 18th of March was removed to the interior with other sick and wounded. At the time of his removal there was but little discharge from the wound, and it was rapidly cicatrizing. His general appearance was that of a patient recovering from an ordinary flesh wound.

At the present time (February 3d, 1874,) the patient is in the enjoyment of all his faculties, and with the exception of an occasional headache, and some ill effects from the hot sun, is in excellent health. The opening in the skull is not closed by bony tissue, as the pulsations of the brain can be distinctly observed and felt. His virile powers are not apparently impaired, as within the last six years he has married, and is now the father of four children.

Since the above was written, I find, upon questioning the patient, that he had a convulsion in January, 1873, but without recurrence since.

Digitized by Google

ARTICLE XV.

A case of Acute Dilatation of the Stomach. By DR. WILLIAM C. WEY, of Elmira.

The following history is suggested by a report of several cases of Acute Dilatation of the Stomach, by C. Hilton Fagge, M.D., in Guy's Hospital Reports, third series, volume xviii, 1873. The case occurred in the practice of the late Dr. Henry Meisel, of this city, and the particulars of the patient's life and final sickness have been obtained from members of his family, as no notes bearing on the subject could be found among the doctor's papers.

Frederick C. M. was born in this country and spent his life on his father's farm until he reached the age of twenty-two years. He was attacked with typhoid fever at fourteen and made a slow recovery. Previous to this sickness he had been robust and enduring, and though a lad, his services in manifold ways had proved valuable in the management of the farm. Upon recovering fully from the effects of fever, he was seized with paroxysms of pain in the stomach and bowels, preceded by stubborn constipation, for the relief of which he took powerful cathartics and applied soothing preparations over the surface of the abdomen. It is not remembered that dilatation of the stomach formed a feature of these attacks at this early period, which usually lasted three days, and occurred twice or three times in a year, as long as he lived.

At the age of twenty-two he entered a dry-goods store as a clerk. His health, with the exception mentioned, was ordinarily good, aside from habitual constipation, which he attempted to overcome by the use of various empirical remedies. In 1863, from some circumstances not explained, he abandoned the use of cathartics, when attacked with gastric and abdominal pain, and resorted to emetics, giving preference to ipecac. It was not uncommon at such times for the stomach to be emptied, in the course of a few minutes, of six quarts of thin, green, sour liquid, and always with marked and lasting benefit. Considerable distention of the epigastric region was observed to take place with the access of pain. The swelling or puffiness subsided, as well as the pain, as soon as free vomiting was established. The use of emetics furnished a valuable experience, which was always acted upon, and it was soon noticed that the paroxysms of pain attacked him less frequently, and yielded more

Digitized by Google

readily to treatment. His appetite, always strong and seldom held in check, led him to go often to the markets and cut off and eat, with avidity, raw beef, which he esteemed as the most enjoyable of all kinds of food. He ate at home rare beef and other meats, condiments, vegetables and fruits, and partook abundantly of tea and coffee. He smoked moderately, but never drank alcoholic or malt liquors.

Early in 1867 the patient reached his twenty-seventh year. He was five feet seven inches in height, and weighed one hundred and fifty pounds. His health gradually declined, and his weight fell to one hundred and twenty pounds. For nearly two months he felt unable to perform his duties in the store, and received treatment from his physician for some obscure disease of the stomach. Constipation of the bowels, as in all his former experience, constituted a chief symptom in the case. He was necessarily obliged to live on restricted diet, and gained a trifle in weight. Encouraged by this slight improvement, he again entered the store, and for three days performed his allotted tasks with only partial satisfaction to himself, doubtless supported by a strong desire to appear well for the sake of retaining his situation. His vigor, however, flagged, and he was forced to remain at home, taking short walks, in pleasant weather, around the neighborhood. Suddenly, at 9 o'clock, on the morning of April 21st, he was seized with violent pain in the stomach. His bowels had not moved for nine days. Rapid distention of the stomach and bowels followed, and, as usual, an emetic of ipecac was given. Thorough and speedy vomiting was induced, amounting to several quarts of thin, greenish liquid, which gave out a distinct sour smell. Vomiting was kept up by the use of warm drinks, and at the end of three hours such relief was experienced that he slept an hour, the abdominal distention subsiding in the meantime. Pain with distention again occurred, and Dr. Meisel was called. A drowsy, half-conscious state supervened, the patient lying in bed in the horizontal position. An injection of warm soap suds was administered, in hopes that a free evacuation from the bowels would lessen the abdominal distention and hasten relief. Failing to get a stool, a second injection was ordered, and while turning over the body to facilitate the introduction of a tube in the rectum, death unexpectedly took place, at 2 o'clock, P. M., five hours from the beginning of the attack.

The body was examined eighteen hours after death, by Dr. Meisel, assisted by Dr. Chubbuck and the writer. The entire abdomen

Digitized by Google

was distended and tympanitic on percussion, and the anterior and lateral portions of the chest yielded when struck, a wide-spread, resonant sound. The stomach, enormously expanded, reached from beneath the pubes to a point under the left clavicle, the pyloric extremity occupying the inferior and the cardiac the superior position, while the convexity or greater curvature of the organ, was diverted toward the upper side. The stomach contained six quarts of precisely such green, sour fluid as had been vomited. It was estimated that the liquid contents occupied one-third the space of the distended stomach, whose walls were as thin as paper in every part. On being washed and particularly examined, no trace of disorganization of the mucous surface could be detected. Inspection was facilitated by holding the walls of the stomach between the eye and a strong light, by which test an uniform condition of pallor and attenuation was revealed. The pylorus was closed, as was also the cardiac extremity, so that the extreme length of the organ was made up independently of the duodenum below and the œsophagus above. The diaphragm was pushed upward, crowding the heart to the right side and compressing the right lung, while the left lung was flattened against the spine. With the exception of being unusually pale, the organs of the thoracic and abdominal cavities were in a normal condition.

The father of the patient is now living, at the age of seventy-seven. For six years he has been hemiplegic and is confined to his room. His wife, also seventy-seven years old, is demented in consequence of epilepsy, with which she was attacked seventeen years since. The other children of these parents, two sons and seven daughters, all survive, in good health.

Digitized by Google

ARTICLE XVI.

A new method of Treating Malignant Tumors by Electrolyzing the Base. By GEORGE M. BEARD, M.D., of New York.

During the past three years, I have treated malignant tumors of various kinds by a method of electrolysis, which I have termed *working up the base*, or *electrolysis of the base*.

Ordinary Method of Electrolysis.—In the ordinary method of electrolysis of tumors, the needles, insulated or non-insulated, are plunged directly into the body of the tumor. This method, which was introduced to the profession by Dr. Althaus, of London, is very satisfactory in the treatment of certain benign growths, as erectile and cystic tumors, and goitres, and in many cases its advantages over the knife are very great.

In some of these cases, the results of the ordinary method of electrolysis are not only satisfactory, but really brilliant, and there is no question that the method will become a permanent part of the surgery of the future.

But for *malignant* tumors, this method of electrolysis does not suffice. It will relieve the pain, but relief of pain can be obtained by simple external galvanization without any needles. It will cause a certain reduction in size, but this reduction is almost always limited, rarely exceeding ten or twenty-five per cent. In some cases, not the slightest perceptible reduction is caused, even by the most persevering use of mild electrolysis. The time thus spent on the body of the tumor is wasted time.

Method of Operating.—The patient must first be fully etherized. The method of operating on a *small* tumor is to first insert the needle connected with the positive needle underneath the tumor and near the border. A similar needle connected with the negative pole is inserted also underneath the tumor, and, if possible, at some distance below the base of the growth, so that the point emerges on the opposite side. The current is now gradually let on, and the strength increased until the electrolysis becomes active, as will be indicated by the yellowish form that appears at the negative pole, which becomes gradually loosened. As the action increases, the negative pole may be slowly worked from side to side, with a slight cutting motion, so as to undermine the tumor.

Digitized by Google

After the tumor falls off, through the thorough undermining of its base, the base itself can be worked up in all directions with the needles, or with a harrow electrode and a roller electrode that I have devised for this purpose.

If the tumor is a large one, as an extensive epithelioma, or scirrhus, it is better to have it first removed by the knife. The base can then be worked up in the manner just described.

The cavity, after the operation, has a charred appearance.

The time required in an operation of this kind ranges between ten minutes and a half or three quarters of an hour.

Little or no pain follows the operation, although the charred appearance of the cavity that has been thoroughly electrolyzed suggests terrible agonies.

Instruments required.—For this method of working up the base, I have devised needles, or electrodes, that are quite different from those employed in the ordinary method of electrolysis. The needles are long, spear-shaped, double-edged, and tolerably sharp, so that a slight cutting action may be combined with the purely electrolytic action.

Theoretical Argument for the Method.—The most recent pathological investigations seem to point pretty clearly to the view that cancer is a local disease, and affects the adjacent parts and the general system by actual transfer of the cancer-cells.*

If we accept these views, we must also accept the view that cancer, whatever constitutional treatment we adopt, should be treated locally, and by some method of local treatment that acts not only on the body of the tumor, but also and especially on the surrounding tissue, and that the earlier such treatment is used, the better the prognosis.

When we remove the tumor and close up the wound, we leave the areola mostly untouched, and shut up the cancer-cells in a soil best of all adapted to nourish them. Hence we need not wonder that the disease recurs either immediately in or near the place of removal, or that the cells wander to some distant part where another tumor appears after months or years.

The morbid or semi-morbid tissues that surround malignant tumors have been treated in various ways by caustics in substance,

* See "A Lecture on the Structure of Cancerous Tumors, and the Mode in which Adjacent Parts are Invaded," by Dr. Woodward, Assistant-Surgeon, U. S. A. The Toner Lectures of the Smithsonian Institute, Washington, November, 1873. See, also, the recent and admirable discussion of the subject by Drs. De Morgan, Hutchison, Paget and others, in the *Lancet* for March and April, 1874.

Digitized by Google

by caustic needles, and by the actual and galvano-cautery. So far as I can learn from the experience of surgeons who have faithfully tried any one or all of these methods, the results are more satisfactory than the results of ordinary treatment by the knife or ligature.

The theoretical arguments that electrolysis of the base would produce more radical results than the use of caustics, are based necessarily on our ideas of the nature of the electric force and of the process of electrolysis. When electrodes connected with the two poles of a galvanic battery are inserted into the animal tissue, the vibrations of the electric force not only pass between the electrodes, but extend at a considerable distance in all directions from them, and much further than the direct effects of caustic would reach.

Advantages of the Method of Electrolyzing the Base.—1. Less liability to recurrence.

I have kept close watch of a majority of the cases that have been treated in this way during the past three years. In the list of cases are found several epithelioma of the lips and face, and one case of malignant cystic of the neck. But one of the cases of epithelioma of the lips and face has yet recurred; although the time that has elapsed since the treatment varies all the way between three years and four months. The case of malignant cystic has not yet recurred. It is yet too early to arrange any statistics on this subject, for, as every surgeon knows, some cases of epithelioma are permanently cured by the knife, and their prognosis under ordinary surgical treatment is better than that of scirrhus of the breast, or indeed scirrhus anywhere; for, if the experience of the future shall confirm the experience of the past, if a larger induction shall show as satisfactory results in proportion to the cases I have thus far treated, then the question will, in time, be settled beyond dispute.

Some hopeless cases—notably a case of scirrhus of the rectum, and epithelioma of the vagina—I have treated by this method in order to palliate the symptoms and prolong life, and with most interesting and remarkable results. Indeed, I have been as much encouraged by the palliative effects obtained in these hopeless forms of malignant disease as by the apparently radical cures of milder cases.

It follows, from the theoretical considerations above given, and experience confirms this view, that the results of this method of working up the base will depend entirely on the *thoroughness with which the operation is performed.* If the base be but half electro-

Digitized by Google

lyzed, if patches of morbid tissue be allowed to remain, then there will be a recurrence, in all probability, just as after other modes of operating.

2. Less hæmorrhage than other methods of operating. The reason for this has already been explained—electrolysis coagulates the blood, constricts the tissues, and slightly cauterizes them. Ordinary parenchymatous hæmorrhage is thus controlled in the most satisfactory manner, so that if a strong current is used, neither sponges nor styptics are required.

3. Less liability to shock. I form this judgment from protracted operations made on patients in various stages of debility, and in the extremes of life, infancy and old age. I have not yet seen any effect at all suggestive of shock, after very long sittings under strong currents, even where sensitive localities were operated on. The electric current would indeed appear to be one of the very best *antidotes* to shock, and for a long time it has been known and used as a means of resuscitation.

4. It is followed by a more satisfactory healing than other operations. This fact has been observed markedly in several severe and hopeless cases, and has attracted the attention of all the surgeons who have seen the cases. (In illustration, see the case reported by Dr. Crosby, in the May number of the Archives of Electrology and Neurology, pp. 98–103.)

5. There is reason for the belief that the future will show that septicemia and pyemia are less likely to follow electrolysis than other surgical operations. It is more than probable that electrolyzation, like cauterization, constringes the absorbents so that they can not as easily take up pus with the circulation.

6. To all these facts must be added the consideration that many patients dread the knife—without reason it may be, and without common-sense; but patients are not expected to exercise reason or common-sense—and such persons are willing to submit to electricity, however employed.

The advantage of working up the base by electrolysis, as compared with working up the base by caustic, the actual cautery, or the galvano-cautery, are worthy of study. The galvano-cautery may be combined with electrolysis of the base.

The Disadvantages of the Method are these.—1. It requires apparatus more or less bulky, and that require more or less experience in their management.

2. Electrolytic operations frequently require more time than

Digitized by Google

operations with the knife or ligature, and, in some cases, the operation must be repeated.

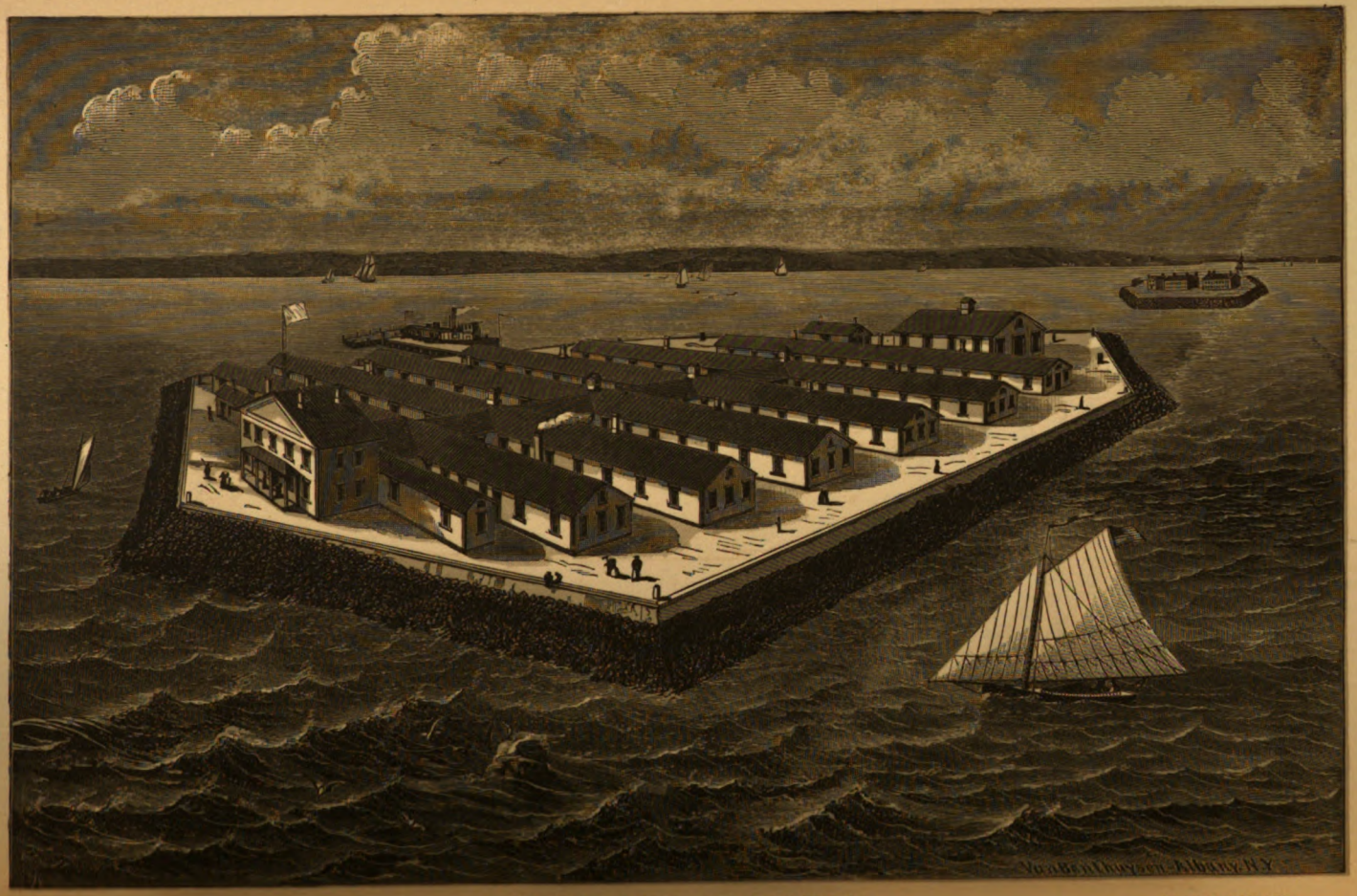
If electrolysis produced shock, this element of time might, perhaps, be a serious one; but, inasmuch as it appears to act as an antidote to shock, and as the stimulus of the current allows us to prolong anæsthesia with safety, and, as in many of the cases where electrolysis is used, treatment by knife or ligature is contra-indicated, this objection need not deter us from resorting to it.

3. The irritative fever that follows powerful and prolonged electrolytic operations is sometimes severe. The parts around the tumor operated on become more or less swollen, but are not usually painful, and this swelling also soon subsides.

At the next meeting of the Society, I will detail cases illustrating the method of electrolyzing the base in various forms of malignant tumors.

Digitized by Google

Digitized by Google

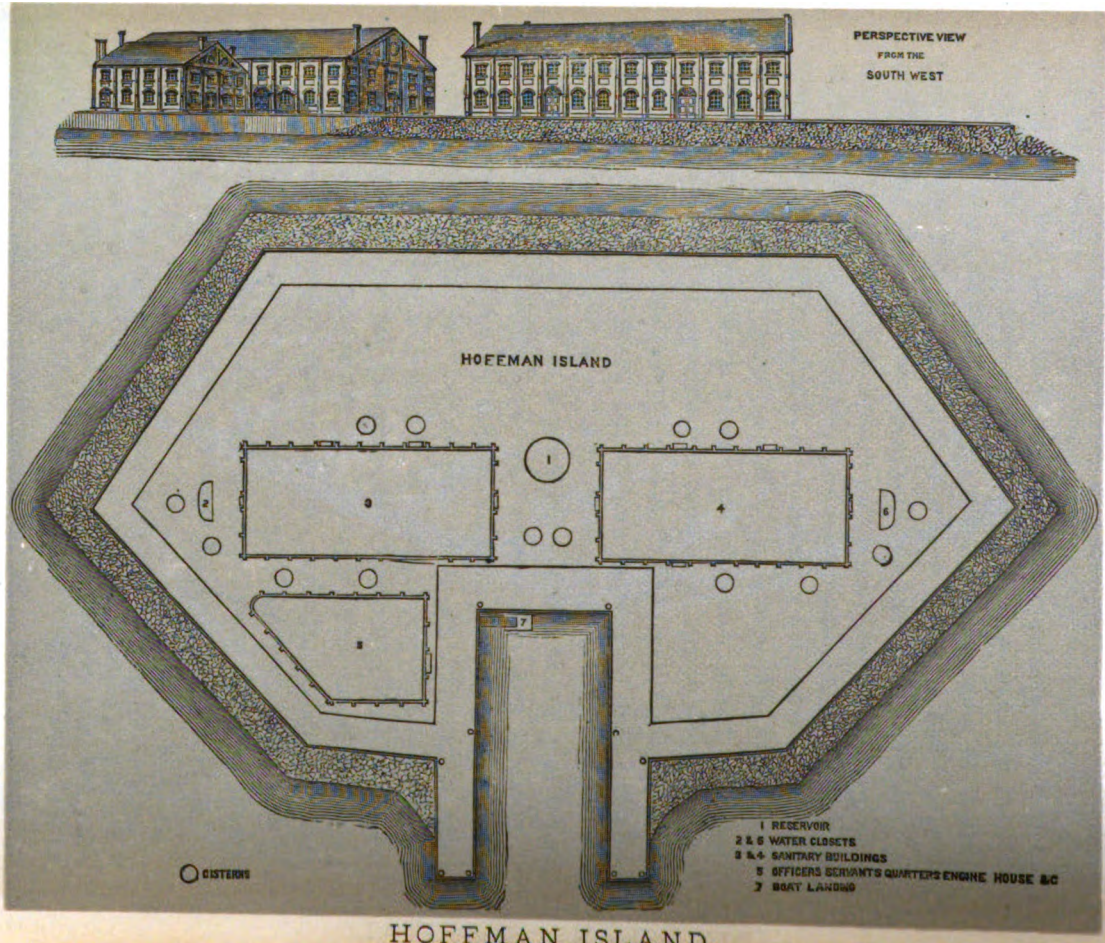


DIX ISLAND HOSPITAL.

STATEN ISLAND IN THE DISTANCE.

HOFFMAN ISLAND.

Digitized by Google



HOFFMAN ISLAND.

Digitized by Google

Digitized by Google

ARTICLE XVII.

General Principles affecting the Organization of Quarantine; a paper read before the New York Academy of Medicine, in December, 1873, and, by resolution of the Medical Society of the State of New York, requested for publication in its Transactions. By S. OAKLEY VANDERPOEL, M.D., Health Officer of the Port of New York.

The consideration of the subject of quarantine is based upon the notion that there is a class of blood-poisons which are *transmissible*. It is, I believe, admitted that there are those of a strictly endemic character, dependent upon local conditions, and, with the exception of typhus fever, rarely extending beyond the influence of those conditions. With this single exception they are not *contagious*, or, to use a more fashionable term, in the place of one which, since the days of Frascator, has done good service, and explained succinctly the idea intended to be conveyed, they are not *transmissible*.

There is, however, another class, which may be termed *exotic* in origin, and to prevent the importation or transmission of which, quarantine, in one form or another, was long since established. Limited both in number, and in the extent of territory in which they are indigenous, they assume a virulent and specific character, become transmissible to persons not exposed to the primary influence, and extend over vast portions of the inhabitable globe, and, after raging epidemically for a period, subside sometimes, it would seem, from mere lack of material for further ravages, or at another as if the primary germ-power had become exhausted. Coming as they do from localities outside of European or North American centers of population, their approach is always regarded with grave apprehension; and from the earliest periods we find each country, each district, or it may be each municipality, devising restrictive measures to prevent their ingress. The plague, yellow fever, and cholera, are the three diseases included in the above description. From the first named this country has been wholly exempt; yet from the fact that it has repeatedly been a fearful visitant over large portions of Europe, and that the restrictive measures adopted for its prevention, running through centuries, were the bases of all later ordinances to prevent the spread of yellow fever and cholera, I shall be compelled to refer constantly to them in the discussion of the question. Fortunately, in the organization of measures at this port, the traditions,

Digitized by Google

and oftentimes senseless regulations, which resulted from blind and fanatical populations in Europe, were not all-powerful to control their formation. Still the traditions of the past can everywhere be seen, sometimes affording valuable light to direct present operations, and sometimes, by an effort at blind uniformity and fixed regulations, presenting stumbling-blocks, which would be to the sanitarian so many causes of offense, and obstructions to all real progress.

I am aware that the subject is one rarely brought to the attention of a medical audience; yet if you recall for a moment that in its consideration are involved the most delicate questions which hygiene presents, that we must study the origin, progress, and methods of dissemination of contagious diseases, in order that we may intelligently limit them, you will see that it is intimately germane to all hygienic studies.

The name of *quarantine* is given to the measures of isolation imposed on persons and cargoes, susceptible, on account of their passage or their contact with persons or contaminated objects, of transmitting an epidemic or contagious disease of exotic production. Originally the word indicated the limit of time (forty days) that individuals suspected of exposure to pestilential contagion should be placed under observation. It no more expresses the duration of this trial; and now, in ordinary parlance, as well as special sanitary expression, the word *quarantine* expresses principally isolation and sequestration, without reference to the duration of the application of these measures—a duration which has varied so frequently according to the particular period, which varies still in different places, and which varies especially according to the nature and the different conditions of danger recognized in those exposed. It comprises, then, more specially, the whole series of restrictive measures destined to prevent the march of an epidemic or contagious affection. There are other measures, not strictly included in the above, which serve to complete this system, in acting not as barriers against the threatened scourge, but rather as modificators of the particular district threatened, in which are involved all hygienic precautions. For the march of every affection transmissible by man is in reality subordinate to two conditions, each of which plays an important part: 1. The contagion, more or less intense, no matter what may be the vehicle. 2. Amount or degree of receptivity of the threatened population, of whom the immunities or morbid predispositions, sometimes inappreciable in their intimate cause, are, however, usually referable to the hygienic conditions of the population.

Digitized by Google

Since the end of the last century, however, we see observers of merit inveigh against the doctrine of contagion, and consequently the practical consequences thence arising. These would be the suppression of quarantines, the abolition of all impediments which might obstruct commerce, and the free circulation of travelers and merchandises. This is not, then, a discussion purely scientific, which amuses only cultivated intellects, having little practical results; on the contrary, an affirmative or negative solution would, on the one hand, paralyze all efforts, or, on the other, impress upon them a determinate course. For, if the origin of epidemics is to be ascribed to cosmic, telluric, or individual causes, over which we cannot hope to exercise any influence, we must be resigned to them, and support them with the same patience as we do the summer heats or wintry storms. This idea has its practical application in the respective measures taken by England and France with reference to the cattle-plague. Breaking out as it did about the same time in both countries, the resultant effect of different action is readily noted. The French veterinary officers, convinced of its contagious character, took immediately the most vigorous measures to strike at the root of the evil. It was necessary to slaughter promptly about a hundred animals to put a stop to the progress of the epidemic. In England, the anarchy of opinions, as well as imperfect legislation, allowed things to follow their natural course. The result was, that three hundred thousand animals died from the disease.

It is, then, of the highest importance to have decided opinions upon the subject: to wait until an epidemic is upon us, is to wait for precautionary measures after our building has been fired. Individual facts have more than once shown that the arrival of a single sick person in a locality, up to that time intact, has developed the epidemic. It is the initial case in which lies the chief danger; nor can I recall a better illustration of this than the facts presented by Dr. Peters in his researches upon the cholera in Lexington, Kentucky, during the past summer. Thirteen deaths occured, before that of the initial case, every one of which was traceable to causes emanating from that case. I may mention here as at least a recognized fact, that all epidemics follow the routes, and with the same celerity as those who travel upon them.

On these points it will at least be found that clinical observation, international hygiene, and direct experiment, are in full accord with the teachings of traditional medicine.

Digitized by Google

With this preliminary statement, I proceed to a more systematic discussion of the subject.

1. All restrictive measures, isolation, quarantine, or, as practised in parts of Europe, the "cordon sanitaire," have exclusively as their purpose, often indeed at the expense of human liberty, to trammel the propagation of the morbid cause. Local hygienic measures are intended to render a district, so to speak, refractory to the action of this cause, by not presenting the materials favorable to such propagation. Unfortunately, these two courses have been, on the part of some, considered as two distinct methods, antagonistic the one to the other. The first, that is, restriction, has been extolled beyond measure by the contagionists, as sufficient. They only see, in every epidemic propagation, a series of morbid acts, fatally imposed on many similar organisms by the contact of a specific germ. The second, the pure hygienist, is the device of the partisans of morbid spontaneity, of the anti-contagionists, who, not content to recognize the enormous influence which the local conditions possess upon the germ, forget that we often see epidemics propagated in most salubrious localities, and consequently that we must oppose to transmissible affections other obstacles than those ordinarily included in mere hygienic principles, which alone can never confer upon the masses of a population an immunity comparable to that of lessening or rather excluding the cause. Each system errs in creating an exclusivism, because first, the method of absolute restrictions is contrary to the dignity of man, by the frequency and the abuse of the sequestration which it imposes. It is contrary also to the well-being and health of a people, in neglecting to guard against the dangers which arise from the collections of filth, the true local nests of every infection. Yet to-day we see this exemplified in all the Spanish, Italian, and many Eastern ports, where it constitutes the only safeguard in times of great epidemics. We know full well that, in most of these countries, the moral wretchedness of the people equals their physical, that above all else they are blindly superstitious, and attach themselves to measures of quarantine sequestration with the fanaticism of all their other beliefs, and are ready at the first indication to sustain them by the most violent and blinded acts.

2. The method of local prevention by rendering healthy the threatened locality, in ameliorating all the social conditions of the inhabitants, is, in itself alone, more specially adopted by a civilized people. It has this immense advantage, of inaugurating and estab-

Digitized by Google

lishing for a community an era of comfort and prosperity. You are all aware how much England owes to her immense works, undertaken, upon hygienic bases, within the past ten years. Thanks to these labors—thanks, also, to her natural isolation from the Continental masses; still more, thanks to certain climatic conditions—Great Britain can, with impunity, maintain the free *pratique* of her ports. To attribute her immunity against different pestilential diseases to the happy effects of hygienic measures, is to encourage every nation or community with whom the principles of hygiene have not yet become practical; but, in so doing, only one of the reasons of this immunity is recognized: the importance of climatic and topographic influences upon the march of epidemics is forgotten. In France, where public hygiene has made great progress—in this country, which will soon surpass, in this respect, the civilized world—owing to the special conditions of geography and climate, it is necessary to adopt, against the propagation of epidemics, a more complete system of prevention. They must first obstruct, by restrictive measures, the propagation of the morbid germ; and, secondly, render, as far as possible, each locality refractory to its development. In both France and this country we have the daily proof that the two methods, in place of mutual exclusion, should be combined, in order to unite the double base of international and municipal prevention. So far from opposing each other, these methods mutually complete a system; and now, at this port, the system of quarantine embraces the whole series of prophylactic measures opposed to the propagation of epidemic diseases, it matters not whether the measures have for object the opposing of the transmission of the morbid germ, or whether only to hinder its development by hygienic labors. From this happy accord results a sanitary *régime* more complete and more rational, and where we can, according to circumstances, apply the one or the other element. Quarantine restrictions, so senseless and imperfect heretofore, have drawn from prophylactic hygiene the fundamental principles of their actual working.

The truth is, the question of quarantines is one of the most complex of hygiene and medicine. If you bear in mind the obscurity which still hangs over the conditions of the development of epidemics; if you recall that, upon the globe, there is not a continent—that, on such continent, there is not a country—which does not present different conditions of predisposition, or immunity, with reference to these scourges; if, further, it is remembered that every

Digitized by Google

quarantine system, while it confers advantages upon those it protects, involves grave prejudices for those it contravenes, you will understand how difficult it is to express, in determinate administrative formulas, regulations applicable to every place. The joint responsibility so necessary among localities, since the most rational or the most absolute measures undertaken in one country can be annulled in their results by the indifference of another, will, for a long time, be difficult to obtain. To be scientific and practical, they should necessarily arrive at conclusions variable according to the locality or port to which the regulations are to be applied; variable, also, according to the nature of the diseases they propose to contravene. These regulations will then, by their diversity, recall how varied are the dangers they should prevent, and also how different is the morbid receptivity of the different populations which they are to protect. It is not difficult, then, to comprehend how essential it is that the great question of sanitary measures should become more and more the privilege of competent men—of men who understand the mode of propagation of epidemics, the local and geographical conditions of their development, and the special prophylactic measures applicable to each.

Rules established by tradition and custom have, without doubt, thanks to their uniformity, great facility in their practical application. But always to impose the same rules, in the most diverse conditions of time and place, as well as the nature of the epidemic designed to arrest, would be to act contrary to all our scientific data. Too long has this reform been retarded by the traditional errors drawn from European regulations, and we have, in this country, the opportunity to disembarrass ourselves from a host of practices inspired by secular prejudices common in Europe.

While, then, true prudence should cause us to abstain from bringing the same regulations to the prevention of all pestilential diseases, the forms and modes of propagation of which vary so wholly, according to the places in which they are observed, we are not so embarrassed in determining the nature of the establishment required. Sanitary establishments have to-day their types, indicated by physicians and hygienists—types which can be reproduced and, as occasion requires, perfected. Not so, however, the regulations. You cannot give to all ports the same mode of application. In one city there may be topographical or social conditions which modify the degree of morbid susceptibility in the different classes of the popu-

Digitized by Google

lation. In fine, no absolute, no arbitrary rules can be formed, suitable for every latitude, every clime, or every people.

There is still another class of influences, irrespective of locality and the different forms of the pestilential diseases. They are the particular features of the epidemic itself, so variable at each explosion. When, for instance, we see one of these affections cover, so to speak, the entire world in its manifestations, or, at another time, as a circumscribed epidemic—when, in following out their history through a course of centuries, we see, at one time, the plague, at another, cholera, or, again, yellow fever, play successively the principal part in the scourges which decimate populations—we are certainly compelled to recognize the variability of the conditions of development of epidemic diseases, and consequently the inequality in the character of the protective measures.

It seems to me, you will best appreciate the different bearings of this subject by tracing, for a few moments, the origin and progress of the principle I have stated, and which controls the administration of this branch of sanitary science. The idea of the transmission of diseases by contact is one which dates back to the farthest antiquity. The minute prescriptions by which Moses sought to isolate, even in the midst of his camp, those attacked with leprosy, or other diseases which he supposed contagious, would indicate that already, with the ancient Egyptians, this first notion had been universally accepted.

Still, the first account we have of an epidemic propagated from *contagion* is not by a physician, but by the historian Thucydides. The plague at Athens is the first known of these formidable affections which, coming from without, fall suddenly upon an entire population, snatching innumerable victims. In the march of this epidemic we find the principal characters which at different times have been met in all subsequent incursions. Overcrowding, wretchedness, hunger, were shown among the predisposing causes, and which ever since have been known to favor the development of these fearful scourges. The fact, too, was established, that its way of entry was by the *sea*, the chief route for epidemics to enter a country.

It was not, however, until the appearance of the plague in 1348–'50, that the *régime* of quarantine against pestilential affections was fully inaugurated. As for ages previous leprosy had been the principal disease in which isolation was ordered, we see, in looking over the regulations which existed in many of the places on the shores

Digitized by Google

of the Mediterranean, that they were those adopted with regard to leprosy, save that the definitive isolation of the one was changed to the temporary sequestration of the other. About this period the recurrence of grave pestilential epidemics inspired the public, rather than physicians, with the notion of their transmissibility by those attacked. As a consequence the restrictions were marked by the brutal and superstitious spirit which characterized the age. The murdering of physicians, the bloody persecutions against the Jews, self-imposed tortures by individuals to propitiate Divine mercy, witness the superstition and barbarity of the epoch.

Soon it was noticed that vessels and passengers coming from the East, though not attacked themselves, brought with them the morbid germ. Venice, rising from her lagoons, was then the most enterprising and chief commercial city of the world. Covering the Mediterranean with her vessels, she made at the same time commerce and war; consequently her port more than any other was subject not only to the black plague, but especially the Egyptian, then so frequent in its explosions. Induced by their frequent appearance, she proscribed the sale and destroyed the effects of those who had died. She created three protectors of the health, a health bureau, and finally a lazaretto, which subsequently formed the model for all other ports.

Her example was followed by all the smaller places on the Adriatic coasts, existing then as separate governments. It is probable that the terror inspired by the repeated visitations of the pestilence gave rise to that persistent hostility to strangers which still exists in many portions of Southern Italy. From this time, too, dates the period of *forty* days as necessary for the examination of suspected persons. Another fact of interest in this connection is, that for the *first* time medical men, not only by the aid of scholastic arguments, but by the study of facts, interested themselves in the question, "how far contagion was concerned in the transmission of the plague"—as the result of these inquiries, running, it is true, through a long series of years, for after the disappearance of each scourge precautionary measures were laid aside, to reappear more absolute at the approach of new danger.

About the middle of the sixteenth century, the celebrated work of Fracastor appeared. It is the first work which speaks of contagion as now understood. According to him, a specific virus rises by exhalation from the body of the sick, extends but a short distance, attaches itself to certain substances, which thus become contaminated; this contamination remains, and may be transported unknown distances,

Digitized by Google

and infect entire communities. He recognizes also that certain other substances would not be contaminated. The public mind seized eagerly upon this distinction of contamination and non-contamination, the decision of which has been the source of so many discussions and such diversity of opinions. Independent of his natural exaggerations, his work wrought this double advantage: 1. To show certain real dangers not before suspected, and recall to rational observation many minds, misled by the belief in the influence of the stars, or by their faith in the Galenist dogma of occult causes. 2. To dispel, on the other hand, that which was equally difficult, certain prejudices which exaggerated the property of transmission of such diseases and admitted that they could be communicated by voice and expression of the sick. This opinion was still more fortified by a subsequent work by Masaria, who showed the immunity of persons who, during an epidemic, had remained shut up in their chateaux or in monasteries. He limited the ravages, in isolating the sick outside the city. The success which followed this advice made his work an article of faith, and it was followed by the organization of similar establishments in all Mediterranean ports.

From the beginning of the seventeenth century, Europe found herself, relative to the plague, in analogous conditions to those in which we are relative to cholera. The disease had reached its maximum of diffusion through the civilized world, and was especially terrible in all the large capitals. Sanitary police were established in all or nearly all, and the most vigorous measures were adopted for the sequestration of those stricken. Both local and general authorities acted in concord, the one in defining the movements and restrictions of the inhabitants; the other in surrounding the pested city with troops, to prevent ingress or egress except under definite regulations. The spirit of isolation was carried to such extremes that without doubt the scourge was intensified, by compelling the inhabitants to remain in the infected districts, and often by the inadequate supply of food to those so subjected. Fumigations were also liberally practised in all suspected localities, and also by physicians in making professional visits, but the articles employed were more marked by the pungency or specialty of odor than by any true disinfecting property.

The eighteenth century was marked by the more decided use of lazarettos. The result was soon observed; the disease declined from the interior portions of Europe, and was chiefly confined to the maritime ports. The regulations assumed a more explicit and in some

Digitized by Google

sense rational form, though the penalties were very severe, and enforced with intense rigor. Explicit directions were given to all vessels trading with Egypt or the Levant, not with reference to passengers only, but also the cargo and the vessel itself. The increasing commerce of France with the East gave the port of Marseilles an especial prominence, and its lazaretto became the most celebrated in Europe, not only in the care manifested, but, as knowledge existed, the best conducted. It enjoyed, too, the confidence of the citizens, by several times restraining the contagion from the city after its entrance into the lazaretto.

To one familiar with the history of the subject, it is interesting to study the minute distinctions made not only with reference to the bill of health, but the measures of observation taken with reference to passengers and merchandise—measures which, while they might protect the community, lost sight entirely of the rights and privileges of those suspected; and which, were there the least trace of fomites in the vessel or cargo, would be certain to communicate to the poor unfortunates, who were compelled to undergo an almost unlimited period of observation. During the latter part of this century, observations were more carefully and systematically instituted, and the modes of propagation of the scourge more accurately noted. Chief among these, was the great philanthropist, John Howard. He visited successively the hospitals and lazarettos of the Mediterranean, where the plague prevailed; attacked energetically the defective appointments, established the importance of the hygienic conditions in these establishments, sustained the inutility of quarantines imposed on merchandise, and really laid the foundation for the present English legislation on the subject. He dispelled the idea that the corpse could communicate the disease; a point of great importance, since in many epidemics they were allowed to accumulate unburied, people flying from them in terror. He combated, also, the foolish and grotesque precautions taken by physicians and nurses to escape immediate contact with the sick, and dispelled the illusion that the contagion could be conveyed by their breath.

During the early part of the present century, the doctrine of quarantine was affirmed with renewed energy, and the privileges accorded were, if possible, more decided; gradually, a more exact appreciation of facts induced a more eclectic tendency, preserving that which was useful, and rejecting that which was exaggerated. We notice, too, in European governments the first steps taken to stifle pestilential maladies in their place of origin, which resulted in the

Digitized by Google

international congress to consult upon the principles to be laid down in order to prevent their wide-spread diffusion.

An additional interest arises in their study, from the modification of the list of diseases to which restrictive measures should be applied. Up to the commencement of this century, no other disease than the plague had occupied the attention of quarantines. From 1821, however, the interest in this disease gradually subsided, to be replaced, in a far greater degree, by the questions of yellow fever and cholera. During the few years previous to this the anti-contagionists had inveighed severely against all restrictive measures in yellow fever, asserting that it could not be imported, and that those who thus affirmed were men without experience, obstinate, and of limited information. Scarcely had these positive opinions been enunciated, and even obtained some credence in public sentiment, when the terrible scourge of yellow fever, which invaded Barcelona in 1821, appeared. Its transmission by sea was undeniable; reaching the quarantine of Marseilles, it was excluded from that city.

For the cholera, a different order of circumstances presented. The danger to be apprehended here was not from the side of the sea, but from the land. For years European governments had watched the progress of the Indian scourge, the terror inspired by its ravages in Asia, and had hoped to arrest its progress on the Russian frontier. It was thought that, by creating a "*cordon sanitaire*" on the boundaries of each country, its progress could be arrested. Various restrictions to intercourse were established, virtually establishing quarantines by land as well as by sea. We all know how useless were these efforts. The rapid march of the first cholera epidemic through Europe in 1831, and the fact that it did not appear in certain countries where no restrictive measures were applied, showed the utter uselessness of these *cordons sanitaires* in thickly settled districts, and they were soon abandoned. It had the effect to revive the old discussions relative to its transmissibility from man to man, many asserting that it was wholly epidemic in its character, an argument which had a specious force from the rapidity and uncontrollability of its progress. Its contagion was treated by them as a chimerical belief; those who opposed the idea of contagion were considered truly men of progress, since they opposed restrictions to personal liberty, and their views were applied, not only to cholera, but typhus and other diseases. These hesitations and differences continue more or less still among the different portions of Europe. Indeed, the futility of the effort to establish a uniform system of

Digitized by Google

quarantine regulations for countries or seaports in different localities, having different relations with countries from which malignant diseases are brought, is acknowledged there—that which experience had long ago taught in this country.

Matters remained very much in this unsettled state, both as to the principles which should govern the administration of quarantines, and the varied action of different governments, when, in 1850, a convention, with reference to some uniformity of principle, was held at Paris.

It consisted of representatives from all principal European powers. They were medical men, and with them were associated also the consuls of the respective countries represented in France. Discussions of a purely scientific character were ignored; confining themselves to facts generally accepted, and by the aid of mutual concessions, they arrived at a code of international sanitary regulations, which, though since modified in many particulars, have remained the basis of all subsequent quarantine legislation. Among them I find many of the provisions of the law now in force in this state. I cannot enter into an analysis of its provisions, but whoever reads it carefully will see that it is based upon a study of the cause and progress of the diseases which it is intended to intercept, and, almost for the first time, places the administration of these establishments in the hands of medical men. It is not inappropriate to quote an extract from a paper by the Minister of Agriculture and Commerce, written just before this convention. He writes: "The question of quarantine is one of those questions of public hygiene which the government cannot decide, and which can only be resolved, either by the Academy of Medicine, or the Academy of Sciences."

The spirit inspired by this convention awakened a new interest and enthusiasm on the subject, and was the initiation for the subsequent gathering at Constantinople some fifteen years later. An energetic impulse was given, not only to the study of restrictive measures, but the still more important duty, the application of public hygiene to the prevention of epidemics, if possible, at the source—to stifle them in their exotic cradles, or at home, in removing the causes by which they are propagated, thus each diminishing the zones over which they can spread.

In looking over quarantine legislation as enacted at different times in this State, we are first struck with the freedom from the trammels and prejudices and formalities which so long marked all European

Digitized by Google

enactments. Each principle seemed to spring from the practical necessity of the occasion, and was generally the result of the experience afforded by some epidemic of fever just passed.

The first legislation was in 1784, and compares most favorably with contemporaneous European enactments. Yellow fever was then a frequent visitant of this port, appearing as an epidemic nearly every year during the latter part of the last and the early years of the present century. Another principle, as the result of these repeated epidemics, was early established, viz.: that all vessels from foreign ports, and all coasting-vessels, coming from south of Cape May at certain seasons of the year, should undergo sanitary inspection on entering the port. The futility of locking the door after the article is stolen was applied to quarantine, in the comparative uselessness of restrictive measures after an epidemic had gained foothold in the city. The great mistake was, that in protecting the community they lost sight wholly of the commercial interests involved. True, with navigation at that time wholly in sailing-vessels, *time* was not as important a factor as since the introduction of steam, and vessels and owners submitted most patiently to the restrictions. It is evident, however, that the natural history of the disease (yellow fever) was not fully understood, or we should have no such clause as this: "Vessels to be detained thirty days at quarantine, and twenty days after discharge of cargo. Cargoes to be detained subject to the decision of the health-officer. Crews and passengers to be detained twenty days after the last case of yellow fever, or twenty days after sailing from an infected port." What would become of West India trade if such orders were now enforced? Yet a provision, containing almost similar regulations, stands now in force upon the statute-book. The whole tenor, however, of legislation has been to recognize the opinions and decisions of medical men in the quarantine enactments; and, as a rule, they reflect the current opinions of the mode of dissemination of the epidemics they were intended to contravene. It is not necessary in this connection to recount the present practice with regard to pestilential diseases. I need only say in passing, that, as now constituted, the establishment is most complete in all its appointments, and fully equal to the sanitary requirements of the times. For the present there are still a few general considerations connected with the subject to notice before proceeding to the study of the special diseases.

We are now prepared, after a very hasty historical sketch of the origin and growth of the systems of quarantine, to consider their

Digitized by Google

prophylactic value. I am aware of the varied opinions which exist on this point, both in this country and in Europe, of partisans who on the one hand deny all sanitary value to their restrictions, and on the other, who claim for them exaggerated benefits. On looking closer at the school which opposes all sequestration, I find, almost invariably, that their opinions are formed and based by the surroundings and climate of their *particular localities*—surroundings where, from the nature of their position to neighboring countries, no restrictive measures, save those which could be effected by a *cordon sanitaire* (a system found totally inefficient in thickly-populated countries, and only applicable in sparsely-settled districts), could be applied; and, on the other hand, countries situated in latitudes where the exotic pestilences, all of which find their endemic dwelling in the torrid zone, can, with the exception of cholera, find but a short season when temperature and hygrometric conditions would favor their development.

Such persons, studying alone from their own stand-point, attempt to apply general principles for all localities: a fallacy too absurd for contradiction. Quarantines are not essential to the higher regions of the temperate zone, nor to the localities in the torrid, where climate and temperature readily make yellow fever and cholera endemic. Strange as it may seem, there are still partisans who have their objections, upon the blind belief that there is a mysterious, intangible principle in the propagation of epidemics, and so deny the benefits of preventive measures.

The question naturally arises, in how far sequestration is advisable against exotic contagious diseases.

I. This sequestration is only advisable in localities where a general supervision of the arrival of such diseases is *easily made*, and which are separated, so to speak, by a natural zone of isolation from suspected districts. Such are localities on islands or cities, where the entrance of the disease would be almost wholly by sea. In such places the necessary *régime* is easy of application. This is shown by the almost total immunity which this city enjoys from yellow fever, for not a season passes, but numerous cases are taken off of vessels and detained in the quarantine hospital. During the cholera of 1865, many islands of the Mediterranean enjoyed an entire immunity from the disease. On the other hand, where topographical conditions are less favorable, this isolation from contagious diseases is almost impossible, and consequently it is illogical to impose such conditions upon them.

Still another series of conditions would modify the application of

Digitized by Google

these measures. Such are countries situated in the endemic zone of the disease which it is desired to restrain. Before deciding, then, upon its application for any given locality, we must determine whether it does not already exist there; it may be in complete evolution, or as a localized germ. To apply restrictive measures without first determining these facts, is to establish useless barriers, and renew under another form one of the principal abuses of the old system. The limits of this zone of endemicity are often difficult to decide, still a solution so far as yellow fever is concerned has been reached. The establishment of quarantines along our southern seaboard has shown that its endemicity scarcely reaches our shores: in other words, that, with the exception of a *small portion* of our southern coast, the disease is *exotic*. Still another set of conditions neutralizes the benefit of restrictive measures. Certain countries are too distant from the seats of pestilence, or enjoy climatic conditions so peculiar, that these affections rarely find a lodgment. Take, for example, England: for the past two centuries her ports, relatively to the other ports of Europe, offer a remarkable immunity, when we take into account the extent of her commercial relations, against pestilential diseases. Shall we, then, say that the system of free *pratique*, which prevails in England, should be employed on the Continent? Her immunity from yellow fever is the natural condition of her climate: this, while severe on the coasts of Spain and Portugal, is naturally mitigated as we ascend the Atlantic coast, until in England it finds a temperature wholly unsuited to its development. The same argument applies to the cities farther north than this on this coast. Again, yellow fever seems to require a certain density of population, seldom appearing in places where the population falls much below five thousand. It is readily seen that few of these objections to the establishment of quarantine observations apply to the cities of the Atlantic coast. Situate in the *exotic zone*, we know how useful restrictive measures have been during this century, in suppressing contagions almost entirely from the centres of population. True, much of this has been done in disregard of all consideration for the persons, the cargoes, or the vessels sequestrated, and been the occasion of bitter conflicts between the sanitary and commercial interests; but, since a better appreciation of the origin and progress of pestilential disease has been determined, it seems such interests are in no manner antagonistic, but, rather, that the prosperity of commercial interests is inseparably connected with a healthy condi-

Digitized by Google

tion of the port, and that this can be maintained without contravening their interest or prosperity.

Shall we, then, in the presence of such marked differences, arising from topographical conditions, proclaim the complete inutility of quarantines, even in localities in which, at the moment of danger, every avenue cannot be guarded? The transmission of epidemics through channels of human communications, is too capricious to guard every avenue and manner of contact. All know, however, the special susceptibility of seaports, the guarding of which should be one of the principal pre-occupations of the sanitary authorities in time of epidemic. If we cannot absolutely stop every method of penetration, we diminish, to a great degree, the chances, and preserve intact our commercial centre.

The port of New York, regarded in this aspect, presents peculiarities which require a moment's consideration, not with reference to her position to the yellow-fever zone, from which, since the use of steam-transit, the passage is made within the period of incubation of that disease, and where, without a supervising control, the infection is liable, during certain months of the year, to be brought into the city, but rather to the peculiar feature presented by the *emigration* to this port. Nearly four hundred thousand persons, cabin and steerage, enter annually, not from a single port, or the inhabitants of a particular nationality, but from every country and every principal seaport of Europe. It is thus, in an especial manner, liable to the incursion of epidemics raging in any portion of Europe, and experience has shown that their influence is carried hither even easier than to England. A large emigration of Poles, Finns, and Wallachians is taking place, and, as they come from the direct neighborhood where cholera enters Europe, and where it has been more or less epidemic for the past five years, it imposes a constant vigilance upon the sanitary condition of those coming from such countries. These emigrants are lacking, too. in even the ordinary habits of cleanliness which characterize those from the more western portions of Europe; wearing whole suits of leather, it may be for months in succession, the clothing becomes in an especial manner easily contaminated, and, when so, impossible to purify. The limits of a paper will not permit a recital of the practices which govern the inspection of these vessels, for it covers not only the prophylactic measures involved in the principle of quarantine, but also the general hygienic regulations which pertain to the comfort and well-being of the steerage passengers. Indeed, the functions of the

Digitized by Google

department are now extended to every thing which pertains to their hygienic condition; so that while the community, on the one hand, is protected, the passengers are maintained as cleanly as the crowded quarters permit, and a system of aëration and a frequent sending on deck is enforced.

It may be asked, "Are not the ports from which these emigrants sail equally exposed as this port?" We answer, decidedly not; they seldom receive from sea any of the passengers which they send to us under such crowded conditions. The emigrants reach those ports in small parties, by rail or otherwise, and it is only when a thousand to fifteen hundred are crowded in a limited space that the germs of contagious disease spread with such fearful violence. On land a single case may be promptly isolated; not so, however, on shipboard. Isolation and sequestration are almost impossible, while all concomitant influences, such as confined air, filth, bilge-water and dirty clothing are so many fostering influences for the germ.

If the general principles we have expressed are correct, it will not be difficult to make the particular application, not only to any given locality, but also with reference to the particular disease it is desired to contravene. Such application must be founded upon the natural history, the manner of transmission, and the period of incubation of the disease, and, in shaping restrictive measures, all incidental circumstances must be borne in mind. Whenever rational hygienic measures are faithfully pursued, not only at the source of the infection, but also on vessels in transit, it should be a powerful modifying element in the restrictions applied to passengers, cargo, or vessel on their arrival in port.

I have, however, so far transgressed your patience that I leave the subject, hoping, if agreeable to you, that I may, at some future time, elucidate this branch of the study.

Digitized by Google

ARTICLE XVIII.

On the transmissibility of Yellow Fever and Cholera in their relations to Quarantine. By S. OAKLEY VANDERPOEL, M.D., Health Officer of the port of New York.

After the pretty full discussion of the principles which control the organization of quarantines, we can now advance to the study of the two principal diseases whose inroads they are expected to interrupt. The study will, of course, be limited to their origin and modes of transmission, and not in any way to their diagnosis, pathology, and treatment; the intent being that, by understanding the material features, an intelligent prophylactic course can be adopted. In the limited time allotted, this examination will be necessarily brief and cursory, and I shall, therefore, only attempt to present the salient points in yellow fever and cholera.

YELLOW FEVER.

Yellow fever is a transmissible disease, its place of origin being, probably, certain of the West India islands, and portions of the shores of the Gulf of Mexico. Its prominent characteristics are, a feeble condition, vomiting of black matters, hæmorrhages, and a yellow coloration of the skin, more or less constant, but which is usually most marked *after* death. The enumeration of symptoms indicates, at first sight, a general disease—an intoxication produced by a specific principle—which extends its action to the whole economy. It does not always present the same intensity. While usually assuming the severe form, we may have also merely outline or typical cases, which, to the sanitarian, are as much to be dreaded as the more decided. These half-sick often deceive the most rigid scrutiny; yet they possess the same specific element as the graver kind, and, in point of contagion, the same danger. Quite as much as the lighter forms of scarlet fever or small-pox convey the specific germ, so do these outlined cases of yellow fever.

It is not necessary, in this connection, to enumerate the epidemics of yellow fever, even along the different cities of the Atlantic coast. It has appeared as far north as Boston, nearly two hundred years since, followed by several outbreaks during the latter part of the eighteenth century; while, in New York, during the last century and the early years of the present, it was marked by several

Digitized by Google

epidemic appearances. It has become a yearly visitor at the port—not a summer passing but from twenty to sixty cases are treated at the quarantine hospitals.

Yellow fever can, so far as the greater part of the shores of the United States are concerned, be termed an *exotic disease.* When and where are the precise spots of its origin will probably never be known. It is never shown on our shores except by importation. Once introduced, it may develop and propagate, but never spontaneously. Limited as seems originally to have been the extent of territory from which it could claim origin, that territory has, through human intercourse, been very greatly extended, and there are now few places in the tropical and semi-tropical coasts of the Atlantic but what may be termed starting-points for the spread of the pestilence.

In this connection it should be noted that, while the disease has been known on the Atlantic coast for over two centuries, it is only within the past thirty years, or thereabouts, that its appearance has been established on the coast of the Pacific. This, in part, may be accounted for by the difficulty of transmitting it, even in the hold of the ship, around the cold and wintry climate of Cape Horn; but also by another principle scarcely less potent—the difference in the telluric aspect of the two coasts, the one offering conditions for a permanent *nidus*, the other wholly different. Much of the tropical and semi-tropical coast on the eastern shore of the continent is low, flat—through which large rivers pass slowly and sinuously—and is eminently unhealthy. The western slope, formed through most of its extent by the chain of Cordilleras, presents a far less favorable field for development.

The special sources from which the fever emanates are those marked by paludal conditions. An alluvial soil, scooped or argillaceous, inundated, periodically, by long rains; covered or bordered by mangroves; channels with mixed salt and fresh water; pools of brackish water, or lagoons, formed at the mouth of the tortuous, sluggish river; these, and other paludal conditions—such as exuberance of decaying vegetation, subsoil infiltration—mark the immediate spots from which the fever may propagate. Yet, even here, let me recall a remark made when speaking on the general subject of malaria: that, with its paludal origin, it is not necessary to suppose that there is an identity of cause between yellow fever and the forms of malarial disease. The two diseases have been repeatedly shown to exist simultaneously. The one is transmissible,

Digitized by Google

the other is not; and, again, many countries, many localities exist which generate a deadly paludal but no yellow fever. We may say that the germ of yellow fever appears to be of an organic, miasmatic nature—whether vegetable or animal cannot be affirmed—coming from endemic localities. These localities are exclusively found either on the borders of the sea or at the mouths of rivers, often in common with paludal fevers proper, but still differing from the latter in power of transportation for great distances, and preserving for a long time, without alteration, its reproductive germ.

Recognizing, then, the telluric influence in the origin of yellow fever, there are certain local conditions which favor its propagation when transplanted. First, its ravages are chiefly confined to low countries. Dr. Tower, after a careful analysis of all the localities in which it has prevailed in this country, finds none as high as five hundred feet above tide-water. Again, density of population is another element; it seldom assuming an epidemic form in localities containing less than five thousand inhabitants. Humidity of the soil also exercises an influence. Soil saturated with water will preserve the disease-germ. In this respect it presents a notable analogy to cholera. As with cholera, too, the social and hygienic conditions of a people exercise a notable influence in its propagation. It attains its greatest malignity among the filthy and impoverished, particularly if, as generally occurs, these reside in the low and ill-drained localities of any city.

A word should be said relative to the acclimation of individuals. The general impression is, that the residents of tropical latitudes are, to a great degree, exempt, its ravages being confined to strangers or those unacclimated. This is, however, the case only when the disease is endemic. Let it appear for the first time in any tropical regions, and natives are quite as liable to fall its victims as any other class. Acclimation, therefore, is only to those who have passed a preceding epidemic period, without having left the country, and who must have been more or less impregnated with the yellow-fever germ.

As the germ of yellow fever is, of necessity, transported from locality to locality chiefly by vessels, either engaged in commerce or war, it becomes, to the sanitarian, a question of the first importance to determine whether the fever can develop spontaneously upon the ship. If its spontaneity is possible, then sanitary measures and precautions should not be restricted to vessels coming from ports where the fever is known to exist, but to every vessel in bad

Digitized by Google

hygienic condition, traversing tropical regions. The opinion of physicians of extended experience is unanimous against the hypothesis of spontaneous generation. If it were possible, how is it that it never appears in vessels from China or India—vessels which, from the length of the voyage, and the long exposure to tropical heats, would seem to be in external conditions to favor the development?

While, therefore, the vessel may not create the specific cause, it may become a powerful agent for the concentration of the poison, independent, indeed, of the crew themselves. This power resides in the interior arrangements, in the stowage of the hold, in the material and character of the cargo. We frequently see, on shipboard, the disease re-appear if it has ceased, or become exasperated if already present, should some change be effected in the stowage, no matter in what part of the ship this occurs. This persistence of infectious causes on shipboard is so remarkable, that sometimes, after the unloading of the cargo, even for months, if the vessel is not thoroughly purified, every one entering the vessel is at once taken sick. While practically this cleansing on board of vessels engaged purely in commercial pursuits is easily and promptly effected, it becomes a very serious problem upon vessels-of-war. The more intricate construction of the latter, the difficulty of reaching the innermost parts of the vessels, render thorough purification almost impossible. Dr. Bell, of Brooklyn, for some years a medical officer in the Navy, has informed me that some of our vessels-of-war, once infected, could never enter a tropical region, no matter whether the disease existed at the particular point or not, but that the fever would re-appear on the vessel; that, too, although the vessel in the mean time had spent a year in cold latitudes, without showing the least suspicion that the fever-germs lurked on board. It is this tenacity of the poison to the ship, which induced the hypothesis of spontaneous generation. It would rather be a powerful consideration that there was a living, vital germ, of remarkable tenacity whenever a favorite *nidus* for lodgment was presented. It becomes magazined in the hold and sides of the vessels.

While to certain ports on this continent the question of transmission of yellow fever might, with some show of probability, be questioned, yet, when we have innumerable well-authenticated and observed instances of its transmission to European ports, and many of the more northern on this continent, it would seem that point

Digitized by Google

required no extended discussion, and it remains only for us to determine the modes and manner of the transmission.

Probably, in the literature of yellow fever, the features of no one epidemic have been more carefully studied, and the surrounding circumstances more carefully noted, than in that which occurred in St. Nazaire, France, in 1861. Situate entirely beyond the yellow-fever zone, in 40° of north latitude, there was no danger of confounding the disease, or mistaking the modes of transmission. Every circumstance was most carefully noted from the very inception of the epidemic, by an expert commissioner, on the part of the government. In the statements now made, therefore, many will be drawn from the study of that epidemic, without necessary allusion each time to the source. I may state that experience at this port, and all the other writings I have consulted, fully corroborate the statements advanced.

We have seen that the germ of yellow fever, having its initial point on the borders of the sea, or at the mouths of maritime rivers, in a comparatively restricted part of the equatorial regions, may leave these regions; during transit it may be its presence is manifested by the appearance of sickness among the crew; then, on the arrival of the vessel, we see, during and after its discharge, a series of accidents which, starting from a common source, go on to multiply, forming thus the starting point of the many epidemics of yellow fever. We must now examine closer into the mode of this transmission, to determine whether the vessel, the cargo, or the crew and passengers are the agents.

In the vessel the preponderating influence belongs to the *hold;* there is a confined atmosphere in which the morbific germ goes on concentrating, and which, when the hatchways are open, allows the disease to appear, destroying those who come within its influence, even at distances of several rods. Those necessarily most exposed are the stevedores, who work in the hold, unloading the cargo, and the coopers who repair the broken packages. The water of the bilge is also a favorite lodgment for the germ. If, in the purification of a vessel, this is overlooked, the disease, if once present, will almost certainly re-appear. Certain cargoes or articles will transmit the germ, but their influence is secondary to the *hold of the ship* itself, and are usually harmless unless the hold is already surcharged, so to speak, with poison. It may also be transported in the clothing of passengers and dunnage of sailors. It is not, however, directly contagious from person to person. In the five years that Dix

Digitized by Google

Island has been used as a hospital for this disease, not a case has ever appeared among the attendants or the residents of the island. Of course, precautionary means are taken, the details of which will be given when we speak of prophylactic measures. In this respect it stands in striking contrast to cholera. The one is transmitted by influences entirely outside the individual himself, the other by influences arising directly from the person affected. To apply botanical terms, the one is exogenous, the other endogenous.

The pernicious influence is exerted not only upon those who are immersed in the infected atmosphere, but the poison may be carried by currents of air for greater or lesser distances, and, if the exposure be sufficiently long, affects those thus subjected. It can be distinctly traced for over a thousand feet.

Some practical points remain for us still to determine: 1. The incubation—upon the decision of this must depend the length of quarantine observation. The result of many observations has fixed the duration between two and six days; most ordinarily *three* or *four* days.

Having considered the origin of yellow fever, the extent of territory in which it has been acclimated, the manner of its propagation, and the duration of incubation, we are prepared to consider the necessary prophylactic measures.

1. *Measures to be taken at the port at which the epidemic prevails.*—Directly, we have no control of measures to be applied there—indirectly, our influence is felt, for the facility afforded to those who employ proper precautions warrants them in following the suggestions given.

As filth is the almost necessary *nidus* for this, as well as all contagious germs, the utmost cleanliness on the part of the vessel, and the persons of the crew, should be enforced. While the vessel is in port the bilge should be pumped out daily, and often sea-water pumped in until the water pumped out is clear. After the men have finished their day's work, have them take a bath and put on clean flannels, and do not allow them to lie upon the open deck; wherever there is a poop-cabin so much the better. If the bodies are cleaned, and clean flannel used, all the animal effluvia and sweat which remain on the surface are got rid of; these are found to be a *nidus* for the germ. Still one more measure experience has told is beneficial. It has been found that sailors, whose bowels are kept a little active while in port, are less liable to take the fever, and, if they do, the attack is less severe.

Digitized by Google

2. *Transit of the vessel to this port.*—The hatches are to be kept open and the hold freely ventilated whenever the weather will permit. It is in confined air that the virulence of the poison is concentrated. The bilge-water should be daily changed. On arrival at port, the duration of the traverse is first noted. If no sickness has occurred, and the passage has occupied more than six days, the crews, after thoroughly airing their dunnage, and submitting it to fumigation, are discharged. It may be noted that the crews seldom take any part in unloading the vessel.

Careful inspection of the cleanliness, as far as can be, is made by the inspecting physician. The hatches and all possible openings are kept open for twenty-four hours in the lower bay, so that the strong air which usually prevails there shall permeate every part; everything is then closed tight, and fumigation, as thorough as can be, is made in all parts of the vessel. Arrived at the lighterage-station, the discharge is commenced at the earliest moment; there is absolutely no quarantine of detention; for, if there be fomites on board, the longer it is allowed to remain in the hold and bilge, the more virulent it becomes: a little leaven leavens the whole lump. Here, so far as the cargo is concerned, fresh air is wholly relied on. The raising of the cargo on deck in the open bay, passing it to the deck of an open lighter, where it lies several hours for free aëration, carrying it some miles across the bay to a warehouse, so diffuse any fomites, that, in the two summers' experience I have had, not a case of sickness has arisen from this source, and that, too, on very many vessels bringing sickness into port.

Fumigation is daily made upon the vessel during the unloading. This discharge of cargo is performed by stevedores, who remain at the lighterage station continuously, no one ever being allowed to go to the city for six days after he has labored upon a vessel. The same rule refers also to the coopers, for you will remember it was stated that the great danger consisted in going into the hold of an infected vessel during the time of her discharge. When the cargo is entirely removed, the sides, and every part accessible, are subjected to scrubbing with brooms and water, after which a more thorough disinfection and fumigation follow, and the vessel is at once furnished free *pratique*. She is thus actually returned to commerce sooner than if permitted to go to dock and be subject to the usual process of unloading. There is, therefore, so far as yellow fever is concerned, no antagonism between commerce and quarantine.

Should the vessel have sickness at the time of entering port, or

Digitized by Google

have had sickness or death on the passage, the vessel proper takes the same course: the sick are at once taken off, and the crew or passengers, instead of being at once discharged, subjected to surveillance until a period of five or six days from the last case shall have transpired.

The large use of steam transportation between this and yellow-fever ports modifies in some respects the foregoing regulations.

Reaching, as they readily can, this port within the period of incubation, I have established the rule that five days must elapse from their departure before any passengers or crew can leave ship. As this time is more patiently passed at sea than lying in the lower bay, the time of passage is usually made to fill the entire period. While five days is not the limit of incubation, I must depend somewhat upon the doctrine of averages; that is, if, in a hundred persons, passengers and crew, no case of fever is developed during that time, taking into account the possibility that with some it may have been in incubation at the time of their going on board, I conceive there would not be one chance in five hundred for it to develop on the sixth day. Passengers, if no sickness have occurred, are at once allowed entry to the city. Should there have been sickness, the course already indicated would be followed out. The steamer is lightered and subjected to the same process of cleansing as in a sailing vessel. It is readily understood that, with steamers, time is a far more important factor than with sailing vessels. With an average arrival of five or six weekly from yellow fever ports during the past summer, not one lost her sailing day. Here certainly was no antagonism to commerce. That our visits of inspection were not fruitless, sixty-two cases of yellow fever were taken from forty or more different ships during the past summer; that the protective measures were efficient, is shown in that not a case reached the city or came above the Narrows.

I must now pass to the consideration of the remaining exotic disease, viz., *cholera*. In its historical features it presents, taken in connection with the frequency of its later irruptions, an unusual interest, while various writers have attempted to show that cholera was recognized in the writings of Hippocrates, quoting, indeed, the passage from that writer which attempts to prove such recognition, but which points unmistakably to cholera-morbus, or, as termed by the French, cholera-nostras. True, between the two there is a symptomatic analogy which is not manifested in the clinical expression. The specific cause separates them both; the same as between a violent

Digitized by Google

indigestion provoked by indiscretion in food, and the phenomena determined by taking certain poisonous substances. There may be an apparent similitude, though no identity of cause.

If, however, we turn to the most ancient of the Eastern manuscripts, we have unmistakable descriptions of the terrible malady. The intermittent character of its virulence can also be recognized from the time of the first appearance of Europeans in that portion of the world. It was this intermittent character which caused so many years to elapse before its specific recognition. Following down the lapse of years after its recognition, its presence is, from time to time, signalized. Even during these three centuries, and while communication with Europe was constant, it maintained almost wholly its endemic character, being limited to the south-eastern portion of the Eastern Hemisphere. Nor was it until 1817 that it assumed its migratory character. From this time it presents the singular phenomenon of a disease suddenly changing its character, to emigrate from its birthplace and extend its ravages throughout the world—to be carried from the borders of the Ganges to the Elbe, and finally to reach the capitals of Europe in 1831, and this country in 1832.

The terror it has inspired, the frightful mortality following in its train, the repetition of its invasions, the almost well-grounded fear that it may become acclimated, explain sufficiently the interest which attaches to its study, and the multiplicity of writings of which it has been the subject. By universal assent, and a conviction derived from its non-recognition by earlier European writers, by its description in the most ancient of those of the East, by the study of successive irruptions during the present century, its origin is referred to the valleys of the Ganges and the Brahmapootra Rivers. Nor is the locality of its endemicity probably very extended. It may be described as general in the province of Bengal, and especially the city of Calcutta; with less intensity in the stations of Cawnpore and Allahabad, and their environs. In other countries of India which, in this respect, may be termed near, and in almost similar external conditions, it appears as epidemic, it may be yearly, as at Madras and places of Hindoo pilgrimage, or every four or five years in the provinces of Northwestern Hindostan. As in yellow fever, so in cholera, the exact nature of the particular circumstances which produce the choleraic germ has not been determined, nor why it should be found particularly in that valley. All the peculiarities, both from the formation of the river, and the

Digitized by Google

habits of the populations on its banks, have been mentioned, but without receiving the accredit of dispassionate observers. We can only say, with probability, that it, too, like yellow fever, has a paludal origin, the mysterious germ of which, once introduced into the human system, may go on in the process of propagation, without any lessening of its contagiousness or virulence, even though it had traversed large portions of the earth's area, and had passed through millions of human beings.

Like yellow fever, its power of transmission has also been denied, and, when the epidemic ravages have spread over whole countries, general influences have been invoked to explain the ravages. With its more careful study, few, I think, will venture to deny, not only that it is transmissible, but also that it is *contagious*. In this, bear in mind the broad distinction between cholera and yellow fever. The latter has been stated as not strictly contagious, but transmissible through the media of many substances, and the confined air and bilge of vessels. The former is, however, directly contagious from person to person, and may be conveyed wherever there are routes of human intercourse, whether by land or sea. It is now, and has been for some time past, a favorite study to trace out the grand routes of the various epidemics which have, within the past forty years, so often scourged Europe and portions of this continent. We need here only refer to the results of those studies which have enunciated the principle of its transmission by the great routes of human travel. This, is, then, the central fact of the study, that it is transmissible and contagious from the sick to the healthy, not by contact with the bodies of the sick, but with a material poison thrown off from their bodies, and capable of being conveyed to a distance. This recognized, we start from a presentable stand-point, and feel an assurance in efforts to prevent the spread of the pestilence.

The question has often been raised, "Why is cholera only an occasional visitant beyond the limits of its endemic house in certain provinces of Bengal?" It has been supposed that some unknown atmospheric conditions favor the extension of the disease at certain seasons, and not at others. True, as a rule, it is favored by high temperature, and checked by cold. Still there have been serious local outbreaks, during the winter season, in India, Europe, and this country. Neither great moisture nor extreme dryness of air is essential for the prevalence of the disease, which has been widely diffused, and very virulent under the opposite extremes of moisture

Digitized by Google

and of dryness. The disease has sometimes been known to break out with sudden violence after the occurrence of a mist-laden or a dust-laden wind blowing from a neighboring infected district, and it has sometimes received a sudden check after the occurrence of a violent storm. Probably human occurrences explain, partially, this remittent character rather than the influences of telluric or physical agencies. (In studying the habits of the people it is found the outbreaks occur coincidently with certain great fairs and pilgrimages, when immense multitudes are brought in close relation, with all the accompaniments of filth, and utter lack of all sanitary precautions.)

The cholera shows itself every year with more or less intensity, in an epidemic form, in places where the pilgrims gather. Many of these combine both fairs and religious ceremonies. Among the principal places where this double purpose is carried out are Hurdwar and Juggernaut (and Conjeveram). Hurdwar is in the north of Hindostan, on the Ganges, just where the river breaks through the mountains. The fair is held there every year just at the full moon of April, and every twelve years the pilgrimage is reputed more efficacious than ordinarily, and consequently the affluence there at such times is enormous. A million of persons from every direction are gathered there to make their ablutions in the sacred waters. Passing the night upon the banks of the river, without any covering, they strive to enter the water as nearly as possible at the same time. Scarcely do the ceremonies commence than the disease breaks out, and twenty thousand have been known to die in eight days. Can we seek for a more efficacious mode of distribution? These pilgrims are not alone confined to Hindostan; but, over all countries where the Hindoo worship prevails, pilgrims come to these sacred shrines. They disperse to the northwest along the great caravan routes, carrying the pestilence in their train. A similar mode of distribution is recognized in the immense pilgrimages of Mohammedans to the sacred shrine of their prophet.

While, therefore, recognizing the original spot and district from which cholera may radiate in an epidemic form, as also the means through which this distribution has been chiefly made, the question naturally arises whether or no it may become temporarily endemic or acclimated in any district. The inquiry at this juncture becomes the more pertinent, since thus far the most diligent research has failed to trace the epidemic of the past season in the Mississippi valley to importation, and the chief medical officers of Russia have

Digitized by Google

made a similar declaration with reference to the severe epidemic in portions of that empire during the last summer.

The Acclimation of Disease.

The solution of this question becomes of the highest interest, when we consider the important bearing it has with reference to the origin and portability of several cholera epidemics.

The first point of observation is, that neither yellow fever nor cholera becomes acclimated in every point, where, for a season, they may prevail epidemically. Yet, wherever they occur in a zone where the meteorological conditions and physical formation of the soil resemble their original starting-point, it is not improbable the germs may remain for periods latent, to re-appear in activity under some special conditions, the precise nature of which we are not, as yet, cognizant of. The facts illustrative of this, derived from yellow fever, are numerous and well established; those of cholera bearing upon it are now undergoing lively discussion by epidemologists, both in Europe and this country. It is generally conceded that the starting-point, the *nidus* of country, so to speak, from which both diseases sprang, is comparatively limited; and yet we notice in the case of yellow fever that it is permanently endemic, in a large portion of the tropical and sub-tropical regions of the Atlantic coast.

It is a strange fact that yellow fever is older at all the northern ports of this coast than at New Orleans. Its first appearance in that city was in 1796, since which it has prevailed epidemically there thirty-five times, while not a season passes in which it is not more or less endemic. It appeared in Boston a hundred years previous to that date, nearly the same in New York and Philadelphia, and in Charleston ten times before its appearance in New Orleans. This seems the more remarkable, that, while it was so frequently epidemic upon all the chief cities of the Atlantic seaboard, New Orleans was more closely connected in geographical position, commercial intercourse, language, and government with both insular and Central America, where yellow fever had prevailed for centuries. Several other places in that zone could be specified, where similar conditions are shown to exist: so much so, that we cannot always locate the precise point from which an epidemic may spread. It is difficult to assert the same with reference to cholera. Its appearance is relatively far more recent; its birthplace so restricted, its usual course through the medium of pilgrims so apparent, that epidemologists have become accustomed

Digitized by Google

to that source, and that alone, for the origin of every epidemic; and yet within the past year epidemics quite wide-spread have appeared, both in Russia and in this country, where the most diligent inquiry thus far has failed to trace the direct importation of the disease; and how would it be strange or strained if the analogy of yellow fever were applied to cholera? Both diseases have a paludal origin, both are transported by what we must term, in our present state of knowledge, a *germ*, for the transmissible principle in both shows so many of the properties of animal and vegetable germs, we can relate it in no other connection. Now, all analogous forms of life readily propagate themselves whenever a suitable *nidus* is presented, even far from their primitive origin, flourish for a season, pass into a period of quiescence, to re-appear again after a season in all their first activity. The period of this dormant vitality is not known, and is it difficult to conceive of cholera what is now fully recognized of yellow fever? In the late cholera epidemic in Russia there was an interval of two years, 1867 to 1869, when it would seem to have been latent, and to have re-appeared without the importation of any new germ; and Dr. Blikan, as Director of the Medical Department of the Russian Government, says of the epidemic of the last season, that, "the infected localities being separated from each other by an immense space, entirely free from cholera, the idea of any genetic connection between the epidemics which visited these localities, falls of itself to the ground."

You are all aware of the wide-spread epidemic which has prevailed during the past summer in the Mississippi Valley. Starting in April in New Orleans, it pursued its usual course of propagation to all the principal towns along that river, varying in intensity in almost every instance with the cleanliness of the place, and the vigor of the local hygienic measures adopted to suppress it. Now, the most diligent, painstaking research has so far failed to trace it to importation. The heretofore recognized necessity for such an introduction left no stone unturned to establish it in this instance. The local sanitary authorities of that city, early impressed with the necessity of deciding the inquiry, have failed to find even the most distant trace of importation. The chairman of the State Board of Health of Louisiana gave the subject his earnest and prolonged research; the physician to the lazaretto at New Orleans affirms that he examined every vessel bringing passengers from European ports during the months of January, February, and March, that not a death occurred upon the passage, and not a case of diarrhœa

Digitized by Google

was noticed. So far the universal negative testimony, of those whose duty would be to know, is entirely opposed to importation, and we are compelled to accept their report until a positive relation can be established. I might add, incidentally, that many of the telluric and meteorological conditions of the lower Mississippi resemble the Ganges, and that it would be difficult at least to suppose that the same dormant condition of the germ known to exist at the Ganges may occur at the delta of the Mississippi. If cholera be propagated by a germ, would there be a radical difference between that and all other germs? And yet, who has ever supposed that the germ, infection, or whatever it is called, of small-pox, became any the less active, much less lost its vitality, because it did not always prevail in an epidemic form; or, again, who ever failed to see the characteristic pustule of the vaccine, even though it had passed through hundreds since its renewal? You readily see, gentlemen, the solution of this question has an important practical bearing. If the doctrine of even *quasi*-acclimation be accepted, we must look even more closely than we have done heretofore to the fulfillment of all local hygienic measures.

Do not misapprehend me; this is no effort to show that cholera may spring *de novo*, wherever the external conditions of fomites and filth are favorable to its development; it recognizes the vital, living germ—the germ, which, when active, produces cholera and nothing else; still a germ which, when it has found its appropriate *nidus*, may remain for a season quiescent, until seasons and conditions conspire to have it display its full power as an epidemic.

Perhaps it may be suggested here that the acclimation of yellow fever is admitted, but not so with regard to cholera, since the germ of each is transmissible in different ways. The germ of yellow fever not being generated in the human system, nor transmitted from person to person in any way, but generated *outside*, and taken up after the manner of marsh-malaria, easily finds its acclimation in the many articles in which it is transported, but that cholera-germ, generated in the individual, could only be transmissible by the actual presence of those suffering from it. This, it seems to me, is the strongest point of the argument against acclimation. Yet who will decide the length of time during which the cholera-germ may retain vitality when in a favorable *nidus?* Who will determine the length of time that the trichinæ or the tape-worm may continue in the cestoid state unless favorable influences for their development occur? The little animalcules which swarm

Digitized by Google

each mud-pool are, as the pool dries up carried off with the floating wind, to re-appear in full activity at the next summer's shower. The epidemic in Russia has shown that the germ remained vitalized for two years at least; how long would this continue under the more favorable influence of a tropical clime?

Dr. Macnamara states that if fresh cholera *dejecta* are dried on clothes and furniture, or in the soil, they retain their activity for years, if access of moisture be prevented. He had some of the *dejecta* which, when fresh, were mixed with sand and dried seven years before. Now, when mixed with water, and exposed to the sun, they could not be distinguished from a fresh cholera-stool.

Having established that cholera can be transmitted, it remains to show how this occurs, what are the agents of transmission, how it is influenced by the different modes of locomotion, the crowding of persons, what are the attributes of the generating principle, the means by which it enters the organism. In the limited time remaining, these can be treated only in the most general manner:

I. This contagion always follows the routes of travel, and never progresses faster than it can be transported by an individual himself. In this is, of course, included all that pertains to his progress; his baggage, merchandise, the vessel which carries him, everything indeed which accompanies him.

II. The poison of cholera is cast off with the characteristic discharges of the alimentary canal, and communicated to others in the following principal ways:

1. By the soiled hands of the attendants who are not careful to wash before taking their food.

2. By means of bed and body linen, carpets and other articles soiled by the choleraic discharges.

III. The discharges finding their way into the sewers and into the soil may spread the disease in various ways: 1. By percolating through the soil into wells and other reservoirs of drinking water. 2. By rising with watery vapor into the air. 3. By becoming dried, and then dispersed with the atmosphere in form of an impalpable dust; or, in the words of Mr. Sirnon, Registrar-General of England, "it cannot be too distinctly understood that the person who contracts cholera in this country is, *ipse facto*, demonstrated with almost absolute certainty to have been exposed to excremental pollution, excrement-sodden earth, excrement-reeking air, excrement-tainted water."

Nor is it essential for this contamination that the infected person

Digitized by Google

should be laboring under the full access of cholera-symptoms. The affection is just as certainly transmitted, and probably more frequently by persons suffering from mere choleraic diarrhœa. The essential germ is the same in both, and the choleraic diarrhœa of one will develop into the malignant form in another. Whenever it passes by a sudden leap from an affected locality to one not as yet poisoned, it is probably by some such transportation. Persons so affected are moving about—it may be traveling in cars or on river steamboats. Each dejection, miles separate, may disseminate the poison in the particular locality. Numerous authenticated cases are on record of propagation in this manner, and, during the epidemic of the past summer in the Mississippi Valley, its capricious meanderings were many times traced by this mode of transmission. Its importation to this country is, of necessity, by ships, and, as by far the greater portion of people enter this port, the danger from this source is relatively greater here than in any other. To show the activity it acquires, after being retained for a time on board, let me recite the following fact: The steamship England arrived off Halifax a few years since with cholera on board. A pilot, with an assistant and his son, went off to the ship in an open boat. Hearing that there was sickness on board, the men remained in the boat, which was towed at a considerable distance astern by a ten-fathom line. In this way the ship, with the boat in tow, was conducted to her place of anchor. The pilots then went on shore, and were never on board the infected ship. In the course of the next two days both men were seized with cholera, and one died. Both men communicated the disease to their families. In the family of one there were three cases, but no death; in that of the other, besides the father, who died, there were four cases and two deaths. The only other cases of cholera in Halifax at that time occurred in the family of a man, whose two children were seized, after playing with soiled bedding which had floated on shore from the infected steamer; one child died, the other recovered. The mother also took the disease and died. Surely if disease was ever communicated by infection, it was so in the case of these three families, the different members of which were, in various ways, brought into contact with the infecting material imported by the steamer.

An indirect proof of the contagiousness of cholera is afforded by the fact that the disease has never reached certain countries which, being separated from India by a wide expanse of ocean, and having little communication with that country, have escaped the infection.

Digitized by Google

Among the countries are Australia, New Zealand, and the other Pacific islands; the Cape of Good Hope, and the southern part of the west coast of Africa; the Azores, Bermuda, Iceland, the Faroe, Orkney and Shetland islands, and the western coast of South America.

Of the agents for the immediate transmission of cholera, *impure water* plays an important part. Whoever has kept pace with the many writings on cholera, will see the importance which of late years has been attributed to impure water as an excitant of cholera, not only on the general principle that water, rendered impure by the presence of large quantities of organic matter, favors the spread of an epidemic, but also from water contaminated directly by cholera excretion. Now that public attention is fully awakened to this matter, and also the fact that, almost for the first time in this country, the epidemic of the past summer was carefully noted in many places, we have many interesting proofs establishing this source of poisoning. In the first case which occurred in Lexington, Kentucky, the dejections were thrown out, so that by percolation they reached a well situate near by; twelve subsequent cases were clearly traced to this water contamination. In this connection, I can as advantageously notice as elsewhere, that out of a certain number of persons who are exposed to cholera contagion, whether by impure water, contact with excretions in any form, but a moderate percentage really suffer from such exposure: thus out of nineteen persons known to have drank inadvertently of water, in which cholera excretion had been thrown, but *five* suffered from the disease. Observations show that in a crowded community, apparently equally exposed to the same influences. the above figures are not far from the average, of those who will show actively the contamination. It happens, then, that a large majority of persons exposed to cholera-poison escape completely, or incompletely, though of the latter there are far more than of complete immunity. Of this category are the great number of choleraic diarrhœas known to prevail at the time of an epidemic. This immunity may extend to entire communities, for, after the recent presence of an epidemic, there is an indisposition for another, even though there may have been an entirely new importation; a condition somewhat similar to what we noticed in yellow fever—the community is for the time acclimated.

Let me return, however. Another fruitful mode of contamination is from soiled clothing. Again and again has it been carried

Digitized by Google

into perfectly healthy districts by sending into such localities clothing which had been soiled by those suffering from the disease. Those, too, who wash such clothing are peculiarly exposed; indeed, it should be an established axiom that no contaminated clothing be washed until it has first been thoroughly immersed in some disinfecting fluid. Here, too, I may notice a clinical fact which is of practical value. There is good reason to believe that the fresh cholera-stools are nearly if not quite harmless; that their greatest infecting power coincides with the stage of commencing decomposition, and that in a more advanced stage of decomposition they again become harmless. The practical deduction is obvious: that attendants may, almost with impunity, wait upon those affected if the dejections are immediately thrown in some disinfecting composition, and care is taken to wash the hands and promptly remove soiled clothing. In addition to these direct modes of communication, the virus may be diffused through *the air*, and thus enter the system by the lungs. Its rapid dissemination in a locality attacked, the simultaneousness of a great number of cases in a given agglomeration of persons where contact has not been possible, the fact that persons may be attacked at a short distance from the suffering case, favor the proposition, and attest to the volatility of the cholera-germ. The distance to which the principle can be, in this way, transported, is probably limited, but still must be recognized in studying the active modes of propagation.

Pettenkofer, who has given to the subject long and patient study, insists that soil-saturation performs also an important part in this propagation; *i. e.*, that a porous soil, easily permeable to air and water, coinciding with an elevated water-level from subterranean springs, and especially coinciding with changes in the level of these waters, becomes an active agent in disengaging the poison once brought to it.

We have now no difficulty in understanding that cholera is a disease capable of being rapidly communicated from the sick to the healthy over an extensive population, and yet that, with ordinary precautions, the immediate personal attendants on the sick incur scarcely any risk of infection. In this respect, there is a very close resemblance between cholera and typhoid or enteric fever. The alimentary canal is in both diseases the chief if not the sole outlet for the poison. The bowel-discharges are the means for the infection, and, whereas, the fresh secretions are comparatively innocuous, the subsequent fermentation of the discharges from a

Digitized by Google

single patient may infect the drains of an entire district. Hence, it follows that the inhabitants of a house with untrapped drains, half a mile or more away, may incur three times more risk of infection than the sick man's nurse or doctor.

Having established the proposition that cholera can be transported, and pointed out some of the principal modes by which it is transmitted, it remains, in order to complete the picture, to fix the *duration* of the *incubation*, for cholera, like all contagious diseases, requires a certain time after its introduction into the system to develop its specific character. The congress of 1865 at Constantinople discussed this point long and fully; for the fact that the period of incubation may be from a few hours to (as many asserted) several days, necessarily called forth the most varied opinions. It is probable some of this diversity would be reconciled if the choleraic diarrhœa, which so often precedes the more intense symptoms, could be more rigidly determined. In the practical operations of the quarantine, we cannot, from its greater facility of transmission, take the average incubation, as in yellow fever, but rather extend it beyond the extreme period, say *ten* days.

It now remains to deduce the preventive measures, based upon these views of its history and modes of transmission. Our remarks will apply only to those applicable to its ingress by way of the sea. First, then, no arbitrary rules can be laid down which shall be applicable to all vessels. Every arrival of a vessel with cholera must, having in view all the general laws we have laid down, be judged by the particular features which belong to that case. While, as a rule, every vessel, its passengers and crew having had cholera upon its passage, or at the time of its entry, should be subjected at least to a quarantine of observation, still this rule is not without exceptions. For instance, two steamers entered the harbor last fall, having had deaths from cholera, and another with one well marked, and several of choleraic diarrhœa on board, neither one of which was detained more than twenty-four hours; and yet I felt quite secure in allowing them to proceed to the city. Why was this? In the first, the case was a cabin-passenger. The nature of the disease was almost immediately detected by the surgeon. At once absolute isolation was enforced, passengers from neighboring state-rooms were removed, dejections disinfected, and care taken with reference to soiled linen. Seven days had elapsed since the death; when the vessel entered, the state-room had been scrupulously cleaned and disinfected daily. Here, then, every intelli-

Digitized by Google

gent preventive measure had been employed; the time of incubation, when any passenger having contracted the disease before entering the vessel, was past, and, in view of the measures employed, I had only to consider the possibility of contamination from the particular case. It had been limited to one; the average time of incubation was more than past since his death, without another case, and I therefore decided to let the vessel go up. Now, had a cast-iron rigidity been followed, without reference to the measures which the surgeon employed, all the passengers should have been taken from the ship, subjected for eight or ten days to a quarantine ot observation, the vessel itself thoroughly cleaned, and every part aired and daily fumigated. While such a course would have been warranted by law, and sanctioned, too, by sanitarians, I felt that the precautionary measures adopted were sufficient, and would encourage medical officers and the shipping interest to attack the disease at its *source*, rather than passively allow it to gain full headway, under the conviction that no efforts they might apply would be recognized by the sanitary authorities of the port.

The other death was in the steerage, so sudden that the surgeon was not informed until actual collapse. On inquiry, no dejection had taken place except at the water-closet into the sea; none occurred after the collapse; the clothing was, at the time, examined to see whether any stain was upon it; the body was at once thrown overboard, all the effects disinfected, and ten days had elapsed since the death, on their arrival. Wherein would a quarantine of observation have helped me in this matter?

In the case of cholera which entered the port, every precautionary measure had been adopted; the most rigid examination and inquiry could not detect other cases of choleraic diarrhœa than those referred to. The period of incubation, from acquiring it before entering the ship, had passed, and, with no evidence of contamination to others, the vessel was allowed *pratique*.

In acting in this manner in the above three instances, I but followed, on a limited scale, what is universally recognized by all the European governments, and to which all their later efforts have principally tended, viz., to suppress the disease as far as possible at its source. They feel that the great field for pecautionary measures is in the home of the disease, and the local governments are, as far as possible, discouraging the great pilgrimages, with the large agglomerations of people, and their subsequent religious rites, with already an appreciable diminution in the routes of transmission.

Digitized by Google

A vessel arriving, however, with several cases on board would be compelled to undergo the full ordeal of precautionary measures. The passengers would be removed from the vessel, subjected to a quarantine of observation; any sick appearing to be promptly removed to the hospital located on another island, a mile distant from the island where the quarantine of observation was enforced. In the meantime all clothing would be thoroughly washed, aired, and disinfected, and, when eight days had elapsed without the appearance of a new case, they would be allowed to leave. In the meantime the vessel, after being subjected to thorough cleansing and disinfection, would be allowed *pratique.*

I think you will agree with me, gentlemen, that in the restrictive measures there is no blind formalism, nor any mysterious proceedings. All are deducible from the accepted notions of the history, nature, and modes of transmission of the disease. If this principle is faithfully carried out, there will be, I am sure, no antagonism between sanitary and commercial interests, but most of the measures adopted in behalf of the one will indirectly promote the prosperity of the other.

Digitized by Google

ARTICLE XIX.

Two unusual cases—Meningocele—Lipomata. By James S. Bailey, M.D., of Albany.

A case of *Meningocele.* This interesting malformation occurred in the practice of Dr. M. M. Lamb, of Lansingburgh, N. Y.

Mrs. W., Æt. thirty, a healthy Irishwoman; twice pregnant, and delivered each time at full term. The first child born was deformed, and lived but a few days after birth. The nature of the deformity could not be correctly ascertained.

The subject of this report was one of twins, a male, and weighed eight pounds. The labor was normal, except that it was quite tedious.

The meningocele was one-third larger than the child's head. It was soft and pliable, excepting near the base of the skull, where it was hard and indurated. It emerged from the posterior fontanelle, and was covered externally with hair like the scalp. Internally it was enveloped by the membranes of the brain, distended with sub-arachnoid fluid.

The other twin was a male, and weighed also eight pounds. It was healthy and free from malformation. The malformed babe survived until the fourteenth day, and nursed well within a few hours of its death.

A similar case is reported and illustrated in the Photographic Review, of Philadelphia, for 1870–1.

Digitized by Google

The following case of *Lipomata* is one of unusual interest. The patient was not seen by myself during her lifetime, but I was requested to make the autopsy, at which time the following history was obtained from her daughter, with whom she had lived.

Margaret Remmert, Æt. sixty-nine, German, widow. Has had eight children; has now three living. She began to menstruate at fifteen, and ceased at forty. At the age of fifty-seven, twelve years ago, she began to experience a heavy feeling in the bowels, as if a menstrual period was about to set in. This feeling grew more decided, and located itself on the left side, low down. A tumor appeared, and as it grew in size, the sensation of weight increased. The abdomen was more protruberant than is usually seen in pregnancy at full term. Mrs. R. seems never to have had pain, except such as might be attributed to pressure upon the surrounding viscera.

She has complained a very little of disturbance on the right side. Her bowels have been very irregular, a period of constipation being followed by a watery diarrhœa. Has been troubled with hemorrhoids; otherwise was always a healthy woman. Has never been under medical treatment up to the time of her death. She took to her bed early in June, and died October 30, 1872.

AUTOPSY.

Sectio cadaveris eighteen hours after death.

External appearances.—Rigor mortis slightly marked. Body much emaciated. Tumor of abdomen projecting abruptly over the brim of the pelvis, irregularly rounded over and reaching up under, so as to bulge out the four lower ribs equally on both sides.

Abdomen.—Walls very thin. On right side, directly under the parietal peritoneum, a smooth mass of fatty tissue, itself covered by peritoneum, reaching from the brim of the pelvis to the liver, which it crowded upward; it was divided into a large and small portion so as to resemble a liver, weighing fifteen pounds and ten ounces, very slightly vascular, excepting at its points of attachment, which was broad and slightly defined, located about the brim of the true pelvis and coming from the posterior ligament of the uterus.

On the left side, and overlapped by this, was another tumor considerably larger, weighing twenty-two pounds, and filling the most of the remaining abdominal space. Its surface was nodular, covered by peritoneum and lying next to the abdominal walls; a

Digitized by Google

branch of the inferior mesenteric artery passed into it. It was composed of fatty tissue mainly, and had on its under surface a cyst, holding about eight ounces of fluid. It was attached to the right posterior ligament of the uterus, a part of the rectum being included, and a part of the descending colon was attached to it. The meso-colon seemed to be reflected over it. Both tumors turned out without peritoneal adhesions.

Intestines.—Small and compressed posteriorly to the tumor, but otherwise normal; cæcum *in situ*, and somewhat adherent; transverse colon, with the omentum and stomach crowded above the tumor into the epigastric, and right and left hypochondriac region.

Liver.—Atrophied, one-third in size, displaced upward, the lower edge being above the eighth rib. Gall-bladder much distended.

Kidneys.—Small and flattened, in points granular.

Spleen.—Adherent, small and nodular, and with a leathery feel.

Ovaries.—Of normal size; broad ligament free. On the left fallopian tube, near the fimbriated extremity, two small cysts the size of a pea.

Uterus was about the size of that of a menstruating woman, flattened and containing a thick mucous secretion; peritoneum thickened posteriorly.

Pelvis deformed by a large bony projection inward, from the symphyses, knuckle-shaped, measuring, from the sacral promontory, three and three-quarter inches.

Thorax.—Excepting old pleuritic adhesions, the viscera were entirely healthy.

The upper tumor seems to only have derived its nourishment and support from the surrounding tissues, as no blood-vessel of any size was observed to have penetrated the tumor.

Death, in this case, seems to have resulted from pressure of the lipomata upon the surrounding viscera, diminishing the capacity of the stomach, and the vessels contributing to the absorption and appropriation of food.

This case, by early surgical interference, could have been relieved, and perhaps the life of the patient might have been somewhat prolonged, although her lifetime nearly embraced the period allotted to mankind. The hereditary tendency referred to by Erichsen, seems, in this case, to have been verified, as a sister three years younger, and her daughter, just passed the meridian of life, are likewise affected.

Lipomata, or fatty tumors, are derived directly from connective

Digitized by Google

tissue, and may occur in almost every part of the body. They are most commonly met with in the early periods of middle life, when, generally, the tendency to development of fat is greatest, occurring in the majority of cases without apparent cause, though oft times directly traceable to local causes, as friction and pressure.

Erichsen mentions a case which was hereditarily transmitted to three generations of a family.

They sometimes occupy unexpected locations, though usually are found in sub-cutaneous cellular tissue.

Lipomata sometimes attain enormous size, and occasion great inconvenience by bulk and pressure. In Jones and Sieveking's Pathological Anatomy, mention is made of specimens weighing from twenty to forty pounds, and of measuring several feet in diameter. Vogel also remarks that they frequently attain an enormous weight, and that they occur more frequently in women than in men. They appear most often singly, but not unfrequently several exist together.

Rokitansky, and Jones and Sieveking mention cases seated in the abdominal cavity of considerable size, and that they may affect individuals not otherwise prone to excessive fat formations.

Dr. T. H. Green, in his work on pathology and morbid anatomy, says, in reference to the development of lipomata, that they grow from adipose or from common connective tissue. He remarks: "Adipose tissue, it must be remembered, is merely connective tissue, containing numerous cells which are infiltrated with fat, and its growth consists either in the infiltration of more of these cells, or in a proliferation of the cells and an accumulation of fat in those newly developed. A lipoma in the same way originates by a localized proliferation of cells, which, as they are produced, become infiltrated with fat."

The growth of these tumors is very slow; they are usually encapsuled by a layer of fibrous tissue, and are usually round and lobulated, and may be separated from the surrounding parts readily.

Digitized by Google

ARTICLE XX.

Memoir of RICHARD L. ALLEN, M.D., of Saratoga Springs. By T. B. REYNOLDS, M.D.

Dr. Allen was born in Greenfield, Saratoga Co., N. Y., in February, 1808. His parents came from New Bedford, Massachusetts, and were of the oldest and most wealthy families. His father was a sea captain, a man of culture and refinement, but devoted to his ocean life, its freedom, dangers and fascinations. His mother came of the Howlands, of New Bedford. Dreading this life for her children, weary of its perils, the ceaseless watching which it entailed upon those who waited upon the land, she finally prevailed upon Capt. Allen to remove into the interior, where his boys would not be tempted to follow in his footsteps.

He removed to Greenfield some time prior to the birth of Dr. Allen; following, however, his profession for many years. When he finally gave up the sea, he was a man of considerable wealth. Some time before his death, which occurred many years thereafter, he lost his fortune, and came to the home of his son, Dr. Allen, where, surrounded with every comfort and loving kindness, his life passed quietly away.

Dr. Allen studied medicine at Skaneateles, and afterwards graduated at Fairfield, Herkimer county, New York.

He came to Saratoga about forty years since, entering into partnership with Dr. John H. Steele, who was then at the head of his profession in Northern New York. His partnership continued until the death of Dr. Steele. Dr. Allen then entered at once into a large practice, which continued up to his last illness. A few years after settling in Saratoga, Dr. Allen married Miss Putnam, daughter of Benjamin R. Putnam, who alone survives him, they having no children.

Notwithstanding the arduous duties of his profession, Dr. Allen found time to devote to other pursuits. In the earlier part of his career, he belonged to a literary and debating club then in existence, called the Young Men's Association, many members of which are well known to the world, as New York's most talented sons. With such men as the late Nicholas Hill, Jr., Sidney J. Cowen, W. A. Beach, Thomas Rogers, etc., Dr. Allen showed talent as a debater, and as such was recognized by this *coterie*.

Digitized by Google

He also devoted much attention to politics. Always a democrat, he was at one time one of the most prominent men of that party in Saratoga county. He was a good stump speaker, having an easy flow of words and graceful address. He filled the office of postmaster under Van Buren's administration, but later in life, he substantially gave up politics, and devoted himself to scientific study and attainments. His "Hand-Book of Saratoga," in its information regarding the springs, etc., is an acknowledged authority. His geological studies were very extensive; his collection of specimens, maps, etc., exceedingly rare. His contributions to scientific and medical journals were extensive and valuable.

He contemplated a work on the Burgoyne campaign, had studied that route thoroughly, and was almost ready to publish when stricken down with disease.

When we consider that throughout his life Dr. Allen was a man of very frail health, suffering repeatedly from hæmorrhage of the lungs, struggling to keep up when most men would have succumbed to suffering, fighting pain daily and hourly, striving hard to live that his works might live after him; we cannot fail to admire the courage, the proud, indomitable will which has yielded at last. After life's fever he sleeps well.

Dr. Allen was of an intense nature; a strong friend, believing in upholding through evil and good report, those who realized in him that friendship of which Lord Bacon said "it perfecteth mankind." Just as strong an enemy, and unusually frank, avowing his true sentiments at all times, fearless and regardless of circumstances, and careless of them. In his profession he has always taken a prominent position.

After the death of Dr. Steele he continued to practice alone until 1852, when he entered into partnership with Dr. M. W. Babcock, under the firm name of Allen & Babcock. This partnership lasted until his last illness.

Dr. Allen was a true friend to the young students of his profession. Many a physician in full practice, asking assistance of no man, will look back kindly and gratefully to the earnest, friendly counsel, the warm, welcome hand which lies pulseless to-day. He was a member of the National Medical Association, also of this Society. He was several times president of the Saratoga County Medical Society, and ex-president of the Union Medical Association, in which he took great interest, attending its meetings when scarcely able to leave his sick bed, and extending the hospitality of his own

Digitized by Google

home to the members, whenever the meetings were held in Saratoga.

The last moments of Dr. Allen's life have been simply endurance of pain, borne well, fought hard. But such suffering, that those who knew him best, loved him most, can scarcely grieve that rest has come at last.

Another has just and truly said, "As a friend he was staunch, as a physician he was faithful and conscientious—equally learned in theory and skillful in practice. Naturally of a shrewd, original cast of mind, he united to large native endowments, high cultivation."

An extensive library, whose stores were carefully enriched with the latest publications, both American and foreign, kept him fully abreast of the ripest thought and the best achievements in medical science.

He possessed, also, a keen taste for general literature; and besides being a successful physician, was a gentleman of genial culture—the lack of an early classical education being in a large measure supplied by a varied acquaintance with the best models of English composition.

His heart was large. His benevolence to the poor great. Indeed, these qualities were in him faults, as they frequently led him to open his purse to those who abused his generosity for their own interests. With a nature as simple as a child's, and as easily worked upon, he dissipated large sums for the benefit of others, and thus impoverished himself.

With a natural perception of the beautiful, rare spiritual insight, and a tenderness mingled alike with sweetness and strength, he gave a freshness and a glow to all with whom he came in contact.

His deeds will be remembered as the overflowing of his love for his fellow-men; and for each surviving friend, let these traits be special words of encouragement and consolation.

Digitized by Google

ARTICLE XXI.

Memoir of ALEXANDER HODGDON STEVENS, M.D., LL.D., ex-President of New York State Medical Society (1848 and 1849), ex-President of American Medical Association, ex-President of College of Physicians and Surgeons, Professor Emeritus of Principles and Practice of Surgery, late President of New York Academy of Medicine, etc., etc. By JOHN G. ADAMS, M.D., Corresponding Secretary of New York Academy of Medicine.

(Condensed from a Memoir read before the New York Academy of Medicine, May 25th, 1871.)

Mr. President, and members of the Society:

The life of the dead is in the memory of the living; what we call life is a journey to death, and what we call death is a passport to an unending life. Says an old writer, "Life, O man, is daily death! but death is an everlasting life. True wisdom thanks death for what he takes, and, still more, for what he brings." He adds: "Let us then, like sentinels, be ready, because we are uncertain; and calm, because we are prepared." What is the life of man but the writing of his epitaph? Benjamin Franklin, with profound philosophy, used to say, that "a man was not completely born until he had passed thro' death;" and Edward Young, in immortal verse has sung,

> "Death is the crown of life;
> The king of terrors is the prince of peace."

What is human life? A dream, a shadow, a "watch in the night." What is there of reality in it but the duties of life, with the hopes and aspirations for the life to come? "So soon passeth it away, and we are gone." * * *

Under circumstances of melancholy interest we are called to pay the last tribute of respect to the memory of one who, while he lived, was a representative man in our profession, a trusted and faithful counsellor, an illustrious citizen, a true patriot, an affectionate friend, an ornament to society. He has passed from earth in the maturity of years, having been blessed with length of days beyond the limit accorded by inspiration to human life. Though of a frail physical organization, yet, by great care and strict temperance, his light was not extinguished until he had survived nearly all those who started with him in the race of life. He did not, like so many men of genius, like Swift or Marlborough, "die at the top;" but his mind, when aroused, seemed, to the very close of his

Digitized by Google

long life, as clear as ever. He came to his end "fully ripe, as a shock of corn cometh in his season."

The highly honorable office assigned me oppresses my heart, for I also am bereaved; the ties of an intimate friendship for more than forty years, commencing in the relation of preceptor and pupil, are forever sundered; my beloved friend and counsellor has forever passed away; but the voice of friendship, speaking from his tomb, invites me to this duty, and I address myself to this melancholy office, called by both the living and the dead. His best eulogy is the simple narrative of his life; his most enduring monument, that which shall best impress his character and principles upon the medical profession of our country.

Alexander Hodgdon Stevens was born in New York city, on the 4th of September, 1789. He was the third son of Ebenezer and Lucretia Ledyard Stevens, whose family consisted of six sons and one daughter. The Stevens family was originally from the county of Cornwall, England (where some of its descendants are still extant), the ancestors of Dr. Stevens having immigrated to Boston, Mass., in the early part of the last century. On both sides of the house, it has been remarkable for longevity.

His father, General Ebenezer Stevens, born in Boston, in August, 1752, at an early age became imbued with the patriotic principles of the "sons of liberty," for resistance to the oppression of the mother country, and more especially the "stamp act." In December, 1773, he, with sixty others, disguised as Indians, destroyed the tea on board of three British vessels in Boston harbor, and, in consequence of this act, he was obliged to leave Boston, removing to Providence, R. I., where, in May, 1775, he received a commission from the government of Rhode Island as lieutenant. He served with honor during the whole period of the war, greatly distinguished himself, and, as lieutenant-colonel of artillery, was entrusted by General Washington with special duties of great importance. It was his signal good fortune to witness the humiliating defeat of both Burgoyne and Cornwallis, to the accomplishment of which his personal efforts and sacrifices had so largely contributed. General Stevens departed this life in September, 1823, universally lamented. Letters in possession of the family attest the esteem of Generals Washington, Schuyler, Knox and others, as to the great value of his services as an officer, and their high regard for him as a man.

Dr. Stevens received his elementary education under the eye of his parents until the age of twelve years, and afterwards prepared

Digitized by Google

to enter college at the school of John Adams, LL.D., in Plainfield, Connecticut. In 1803, he was qualified to enter Yale College as Freshman in his fourteenth year. He was an industrious student, apt to learn, with a decided taste for the classics, and in advance of most of his classmates in the acquisition of knowledge. He had the highest veneration for the character and great abilities of President Dwight, and never spoke of him in after life, without expressing his grateful acknowledgments for his kindness and sympathy.

After his graduation in 1807, he selected medicine as a profession, which he termed "the noblest of all arts," and in his eighteenth year entered the office of Dr. Edward Miller, Professor of Theory and Practice, with clinical medicine, in the College of Physicians and Surgeons, and resident physician of the port of New York. With Dr. Miller he enjoyed peculiar advantages in the extensive private practice, and especially in the hospital service of this distinguished man, whom Dr. Rush had pronounced to be "inferior to no physician in our country." Young Stevens was his favorite pupil, and was so highly esteemed, that a prospective partnership was promised him, at the close of his career as a student, on his return from his studies abroad. The character of a young physician is generally determined by the habits acquired in the office of his preceptor. It is not therefore to be wondered at, that, having continually before him such a high standard of excellence, he should have been moved by "stern and high resolve," to emulate his example. After attendance upon one course of lectures in the college (then located in Pearl Street near Broadway), with Dr. Samuel Bard, President, and Edward Miller, I. Augustine Smith, Wright Post, Romayne, McNeven, Bruce, Mitchill and Hosack, Professors, and desiring to profit by the superior advantages which Philadelphia then afforded, he attended his second course of lectures in that city; Drs. Wistar, Physick, James, Coxe, Bartow, together with Benjamin Rush, *facile princeps*, being Professors. * * * On examination, he submitted his "Thesis," entitled "A dissertation on the proximate cause of Inflammation, with an attempt to establish a rational plan of cure," which he dedicated to Edward Miller and Benjamin Rush, who requested it might be printed (a rare request in those days), "as containing important facts, leading to useful and practical results in medicine."

In April, 1811, he obtained the degree of M.D., and returned to his native city, to make arrangements for prosecuting his studies abroad. In order to increase his practical knowledge, he entered

Digitized by Google

the surgical service of the New York Hospital for seven months, prior to his departure. At that period, England and France offered superior advantages for study, more especially in the departments of practical and pathological anatomy, surgery, chemistry and obstetrics, and it was considered necessary for every young physician of sufficient means to "go abroad" to finish his education. Science was not then brought to "our very doors," as at this day.

In 1812, he embarked for Europe as bearer of dispatches, and being captured by an English cruiser, was carried prisoner to Plymouth, England. After a short detention, he was allowed to go up to London. Here he was incessant in his attendance upon the lectures of Abernethy, at St. Bartholomew's, and of Sir Astley Cooper, at St. Thomas' Hospital, with occasional attendance upon other lectures. His companions in London were, Dr. Samuel Ackerly, of this city, Dr. George Hayward, of Boston, and Dr. Benjamin W. Dudley, of Lexington, Kentucky, who in after years became so distinguished as a lithotomist.

During the next season, he crossed the channel to Paris, and became "Interne" in the service of Baron Boyer (at "la Charite"), whose clinical lectures he translated into English on his return to New York. He was intimate with Baron Larrey, the favorite surgeon of Napoleon I.; with Dupuytren, Lisfranc, and Velpeau, then just rising into celebrity. He also followed the service of Pinel and Esquirol, and became familiar with their improved humane treatment in mental diseases. He acquired a thorough knowledge of the French language, writing it with facility and elegance.

Turning his face homewards, he was, soon after embarkation, again made prisoner, and taken to Plymouth, where he was not long detained, but returned home in a Russian cartel. He then, for the first time, heard of the untimely death of his friend and preceptor Dr. Miller, with deep regret, no less than disappointment, since, as before stated, Dr. Miller, with a due appreciation of his abilities, and a foreshadowing of his distinguished career, had tendered to him a partnership under very advantageous conditions; a great compliment, under any circumstances, but more especially when we consider that his pupil had then only attained the age of twenty-two years.

The war with Great Britain still continuing, the doctor tendered his services to the government as surgeon in the army, and served in that capacity until the declaration of peace.

Digitized by Google

In 1813, he was elected a Fellow of the College of Physicians and Surgeons, and in 1814–15, lectured as professor of surgery in the Medical Department of Queen's (now Rutger's) College, in New Jersey. In 1813 occurred, also, his marriage, to a lady of a distinguished New Jersey family. He soon acquired an extensive family practice, and in 1817 was appointed one of the surgeons of the New York hospital, colleague with Kissam, Wright Post, and Mott, with Bard, Hosack, and Mitchill, names illustrious in the medical history of New York. He faithfully discharged the duties of this office for a period of twenty-two years, resigning in 1839, when he was appointed consulting surgeon for the remainder of his life. He introduced into the hospital the practice of clinical instruction, both at the bedside and in the theatre of the hospital, after the manner of his great model, Booerhave. Those of us who have had the privilege of listening to his instructions, can never forget his peculiar aptness for this department, the kindness of his manner toward the suffering, his avoidance of all unnecessary manipulations (so irksome to the patient), the accuracy of his diagnosis, and felicity of illustration.

Clinical teachers (like tenors in the musical world) are extremely rare. Booerhave, Dupuytren, Abernethy, Cooper, Oppolzer in the old world, with Rush, Hosack, and Stevens in the new, may lay claim to this distinction. Booerhave was his model, of whom it is recorded that, "gifted with every endowment, natural and acquired, a mind powerful and generalizing, a fascinating eloquence, learning the most varied and profound, and a character radiant with every virtue," this great master of our art controlled the opinions and practice of medical men during the period of a century, throughout the entire world.

In 1820, elected a trustee of the College of Physicians and Surgeons, he continued his services until 1837. He had the honor of being chosen its president in 1843, and resigned the office in 1855. Under his wise administration the institution greatly prospered.

In 1826, in the very height of professional success, he was chosen professor of the principles and practice of surgery in the college. It was a period of great excitement amongst the profession in New York, owing to the dissensions which had long prevailed between the trustees of the college and the members of the County Medical Society, originating as far back as 1819, and afterwards continued between the professors and trustees. It culminated in the resignation of the professors, and the election of a new faculty, the old

Digitized by Google

professors having established a rival college (Rutgers'), under the presidency of Dr. David Hosack. Upon the merits of this controversy we may not now enter. In our present harmonious condition, which is just cause for congratulation, it is far better to forget old feuds and "unpleasantness," and rather strive how we may best advance the interests of our common profession. While party spirit raged, and hard words were spoken on both sides with great vindictiveness, Dr. Stevens pursued the "even tenor of his way," devoting himself to the duties of his chair, the private instruction of his office pupils (who at that period amounted to twenty-one), and to his hospital service. He showed no malice, nor any vindictive feeling towards his, so-called, adversaries and rivals. He maintained his equanimity better than some of his associates; indeed, he was remarkable for his self-control. Often during his professional career was he made the object of misrepresentation with abuse, and held up to ridicule; but though well acquainted with the authors of these slanderous imputations, he never resorted to legal measures to defend his reputation. He was content to "live them down," remembering the injunctions of the great apostle, as set forth so beautifully in the 13th chapter of Corinthians, whose sublime teachings he endeavored to make the rule of his life. "His enmities were not mortal; his friendships eternal."

After remaining a widower for eight years, he, in April, 1825, married into the distinguished family of Jacob Morris, of Morrisania. On the 17th of April, 1831, feeling the necessity of recreation for building up his constitution (always delicate), now much impaired, he embarked for London in company with his pupil, Dr. Richard L. Morris, arriving after thirty-five days' passage. There he had frequent and familiar intercourse with Sir Astley Cooper, Sir Benjamin Brodie, Mr. Lawrence, and many others of the magnates; visited hospitals, museums, and other objects of interest in that great metropolis. During his sojourn in London the weather was delightful, as usual in early summer, and every hour was one of unmingled enjoyment, which the doctor, in after years, often recalled with pleasure. Sir Benjamin Brodie was particular in his attentions, his fine intellect found sympathy and intense gratification in their daily and unreserved intercourse.

The party continued their tour northward, spending two days at Alnwick Castle, and proceeded on to Edinburgh. Here they were most kindly received and welcomed by Liston and Abercrombie. Said Dr. Abercrombie, "My friend, I will give you the experience

Digitized by Google

which time has taught me; give as little physic as possible; trust rather to the powers of nature." He added, "When I commenced practice it was otherwise with me; the more medicine I gave, the more good I supposed I was doing." In this opinion the doctor most heartily concurred, as identified with his own views of practice. The doctor was invited by Liston to an operation at the hospital, and, while preparation was being made, Liston beckoned to him to step into the operating theatre to examine the case (a large swelling in the upper portion of the thigh), which Lester had diagnosticated "a solid tumor." After a slight examination, the doctor whispered to Liston, "that he had better first use a lancet," at which suggestion Liston seemed much annoyed. He, however, plunged in his "bistouri," when, to his great surprise and chagrin, out flowed a large quantity of pus, and the solid tumor of Mr. Liston vanished. Returning soon after to London, the doctor was called in counsel by Mr. Lawrence, of St. Bartholomew's hospital, in a case of tibia, fractured near the malleolus (the result of a fall), and which Mr. Lawrence had been for some time endeavoring to reduce, without success; the tibia projecting some three-quarters of an inch through the soft parts. Dr. S., after making an unsuccessful effort at reduction, recommended the sawing off of the projecting end of bone, which was accordingly done, and the fracture put in position, thus introducing at St. Bartholomew's a practice which was a common procedure at the New York hospital.

After enjoying anew the overwhelming hospitalities of his "*confrères*" in London, he crossed over to Holland, made a pilgrimage to the tomb of Booerhave, in the church at Leyden, and visited the Rhine valley as far as Frankfort-on-the-Main. At this place the celebrated museum of "Sommering," the anatomist, was exhibited to the party by his son, and excited intense interest. Thence, he passed by way of Paris, receiving marked attentions from MM. Roux (son-in-law of Boyer, his old master), Dupuytren, Velpeau, Larrey and Majendie. Returning to London he embarked for home in October, arriving in season to commence his course of lectures at the college, and resumed his practice with renewed health and vigor.

In the year 1832 occurred the most important epoch in the life of Dr. Stevens, and was the culmination of his career. On the 8th of June, the Asiatic cholera first appeared on this continent, at Quebec, U. C., with such malignity that eight cases appeared simultaneously, three of which, on the day following, had a fatal termination. On

Digitized by Google

the same day, fifteen new cases were reported, and seven deaths. In two weeks, eight hundred deaths had occurred. This news produced intense alarm in our city, and a commission of two medical men was despatched to Canada by the board of health. Suddenly, without having shown itself at any point intermediate between Canada and New York, the disease broke out amongst us. On June 25th, several fatal cases occurred in the eastern section of the city, and on July 4th it was prevailing in various localities, on the west side, near the river. The entire community was panic stricken, and families left the city by thousands with the greatest dispatch. On July 3d, the board of health appointed a "special medical council, to devise such measures as the emergency required." A. H. Stevens, M.D., President, Joseph Bayley, Gilbert Smith, John Neilson, W. J. MacNeven, Hugh MacLean, Richard K. Hoffman and Anthony L. Anderson. They continued to superintend the public medical service until the decline of the epidemic. Dr. Stevens was the master spirit of the council, and himself either wrote, or indited, all the public documents which were issued. Not having sought the appointment, it was a compliment to his high abilities. At his instance, hospitals and medical stations were established in different parts of the city. The epidemic reached its culmination on July 21st, in 300 cases and 104 deaths, the panic of the citizens being extreme and universal. Grass grew in the thoroughfares, the city was half depopulated, "the highways laid waste, the wayfaring man ceased." The total number of cases, up to September 1st, was 5,835; total mortality, 2.996. The "council" closed its labors on the 1st of September, having been in session each day during July and August. In the first epidemic, neither Dr. Stevens nor the council regarded cholera as contagious; but, on the second appearance, he was obliged to admit that, under certain circumstances, it was contingently contagious, and that the great danger arose from neglect, in the speedy removal of all excretions.

In the spring of 1834, he met with a severe domestic affliction in the loss of his eldest son by sudden death, which event preyed upon his spirits and impaired his health for a long period. He seemed not to take the same interest in life, and looked about for a partner, with a view of retiring from general practice and restricting himself to consultation. His choice fell upon Dr. John Watson, a self-made man, a sound, practical surgeon of marked ability, and, as a writer, distinguished for his erudition. To him

Digitized by Google

Dr. S. soon resigned the whole of his lucrative practice, the partnership having been mutually agreeable and profitable.

About this period the doctor purchased a small quantity of land at Astoria, L. I., near the "Old Homestead," where he erected a fine residence, devoting himself to horticulture in the summer; indeed, he became so well known in this department of labor, that he was elected President of the State Agricultural Society in 1849. At Astoria he dispensed an elegant hospitality, and gave frequent entertainments to his friends from the city. In 1838, he again became widowed, with an only daughter left to his parental care; he sought relief from sorrow in horticulture, mental occupations, and in excursions throughout the country.

In the same year, his former pupils, to perpetuate the memory of his long services at the hospital, requested him to sit for his portrait. The work was finely executed by that distinguished artist, the late Henry Inman, and now adorns the gallery of the New York Hospital in company with those of Bard, Mitchill, Wright Post, Mott, Hosack, Cheeseman, Rodgers, J. M. Smith, Swett, and others of the more recent hospital staff.

In 1841, he married his third wife, a lady of distinguished family, of Lloyd's Neck, L. I. In May, 1847, the American Medical Association was founded by a meeting composed of delegates from every section of the United States, convened in New York. National in its objects and constitution, it engaged in the common cause of advancing the interests of medical science; it presented a spectacle of moral grandeur delightful to contemplate, and, inspired by pure motives, most benevolent in its range. Dr. Stevens was chosen one of its vice-presidents, and at its second meeting, held in Baltimore, he was unanimously elected President. This he ever regarded as the highest honor in the gift of the profession, and in his address on taking the chair, he remarked: "Accept, gentlemen, my profound acknowledgments for the distinguished honor you have conferred upon me. Were it not esteemed above all price, it would be earned, dearly earned, by the oppressive sense of embarrassment it brings with it. I have not sought this station, and having never presided over so large a deliberative assembly, am not much conversant with the rules of parliamentary procedure. But, among members of our brotherhood, who acknowledge one faith, and sacrifice at the same altar, there are feelings of good will and sympathy, which, when properly appealed to, contain chords which, when rightly touched, never fail to elicit a harmonious response.

Digitized by Google

On this I confidently place my trust." His address, on retiring from the chair in 1849, at the Boston meeting, was characterized by a similar spirit. * * *

In June, 1849, he received the honorary degree of LL.D., from the Academical Department of Columbia College in this city.

In January, 1851, he was unanimously elected President of the New York Academy of Medicine. Owing to infirm health, he was able to preside at but few meetings, but continued to take great interest in its proceedings. It must not be forgotten that Dr. Stevens, as President of the College of Physicians and Surgeons, together with Dr. Mott, President of University Medical College, and Dr. Isaac Wood, President of County Medical Society, were the founders of the Academy in November, 1847.

In 1848, he was elected President of this Society, and re-elected in 1869,—a compliment rarely paid and justly merited. For his annual address, he selected the theme of "Medical Education," for the purpose of awakening the attention of the profession and of the legislature, to the bold, wide-spread, and pernicious frauds of empiricism, insisting upon the importance of cherishing an educated medical profession. The discourse abounded in interesting facts and statistics. This address must always remain the great monument of his efforts to promote the cause of sound ethics and medical learning.

In 1851 (as before allued to), he was elected President of the New York State Agricultural Society, over which he presided for one year, and delivered the annual address.

From this period he retired to his country residence, at Lloyd's Neck, L. I., where he spent the greater part of the year in the cultivation of his farm, in the education of his children, and in the instruction of those in his immediate neighborhood in district schools, etc. During the winter he spent a few weeks in the city. On the breaking out of our civil war, he exhibited much anxiety as to its result; his patriotism was stirred, and although too far advanced in life to take active service, he connected himself with some of the associations for the relief of suffering and wounded soldiers, and he even made a visit to some of the battle fields of Virginia, inspected the hospitals at Washington, suggesting important improvements, more especially in the conservative treatment of wounds, and in improved ventilation.

In 1865, he instituted a "prize fund" of $1,000, to be called the "Stevens' Triennial Prize," the income of the fund to be awarded

Digitized by Google

for the best essay upon a medical or surgical subject, to be selected by the President of the College, President of Alumni Association, and the Professor of Physiology. This was his last public act, and demonstrates his desire to promote a laudable emulation in the advancement of medical science.

In 1868, he returned to the city, having purchased a residence up town, where he spent the last two winters of his life. He still kept up his reading in the classics, and was a devoted and constant student of the Holy Scriptures. A few days before his last illness, he remarked to his daughter, "I have spent this whole morning in scientific reading, but I come back to my Bible; it contains all I need; there is no book like it."

He was a firm believer in the great truths of Christianity, in an overruling and special Providence, in a personal God, the mediatorial plan of salvation, and in the eternal reward of virtue. It has been charged "that the medical profession is inclined to scepticism, and that these tendencies are on the increase, in these latter days." It is delightful and encouraging to see a man like Dr. Stevens, with all the powers of his high intelligence, standing up on the side of revelation. He had no sympathy with the doctrines of Darwin, Spencer, or Huxley, but abhorred their pernicious tendencies. He felt insulted to be told that man, who was "made a little lower than the angels," and "in the image of his Creator," should be declared to have arisen through various gradations; from an oyster, a tadpole, or an ape. The scripture doctrines had his entire sympathy. These were the invariable rules of his life; their holy hopes, his solace in old age; his support in his closing hour. Futurity, to him, was not a blank; the grave, for him, had no terrors; his hope was full of immortality.

His last illness was brief, he being for most of the time unconscious, yet rallied sufficiently to rise from his bed. He soon after sank into collapse, and quietly expired at the advanced age of 80 years. Thus, calmly passed away from earth the man who, for more than half a century had been a leader and guide; who, in his lifetime, had enjoyed more honors than any of his professional contemporaries; a representative man, struggling through a long life with bodily infirmities, yet triumphing over them all, by the power of a great soul, and giant will. "It is not," says Emerson, "length of life, but depth of life, which determines character; it is not duration, but the taking of the soul out of time, as all moral sense, as all high action does; within every man's thought, is a higher

Digitized by Google

thought; within the character he exhibits to-day. a nobler development; a great integrity, makes us immortal."

His obsequies were simple and impressive, consisting of the sublime service of the Episcopal Church, with the hymns "Rock of ages," and "Just as I am, without one plea," sung with deep emotion. Though the weather was inclement, there was a large attendance of mourning friends, together with delegations from the College, the Academy of Medicine, and other societies, with which the deceased had been connected. His remains were deposited in the family vault at Greenwood, where they rest until the morning of the resurrection.

Resolutions of sympathy and respect, all testifying to his worth and valued services, were passed by the College of Physicians and Surgeons, Academy of Medicine, Pathological Society, Society for Relief of Widows and Orphans of Medical Men, Island Hospital Medical Board, New York Hospital, and the Historical Society.

In reviewing the life and character of the departed, let us briefly glance at their most prominent characteristics. As an operating surgeon he was deliberate and cautious, not caring so much for celerity or display, as safety; and remarkable for his ready resources in meeting unexpected complications. He always preserved his self-control, under the most trying events. He believed in and practiced "conservative surgery," being himself conscious, like Abernethy, that "when he took up the knife, he laid down the science." True it is, that the surgeon "wounds to heal;" yet true surgery aims, at all times, to preserve the integrity of the tissues. As a lecturer and teacher he was clear, comprehensive, often quaint in his expressions, emphatic and impressive, in his style familiar. His lectures "On Inflammation" were models for perspicuity, and exhaustive of the topic. As a practitioner, his diagnosis was accurate; his prognosis, rarely at fault; his knowledge, thorough; his therapeutic treatment sound. Educated under the Brunonian theory (for which he had a predilection), he cast it aside, and adopted, as more congenial with the practice of the day, the method of *Sangrado.* (Blood letting was then carried to extremes. Inflammation must be subdued, "*vi et lancets.*" This has passed away, and John Brown has again taken possession, even in inflammatory diseases; whether for better or worse, observation and experience will soon show. "*Tempora mutantur,*" etc). Dr. Stevens, in the latter years of his practice, modified his views of treatment, but he never fully adopted the extreme stimulation of our day. Endowed by

Digitized by Google

nature with talents of a high order, his scientific and professional attainments were eminent; his writings demonstrate his classical culture; and his indefatigable zeal for the advancement of the "healing art." His honorary diplomas from numerous colleges and scientific societies, both in Europe and America, attest the high estimation of his talents and acquirements.

As a citizen, he was "*vir probus;*" strictly upright, and above all "*ad captandum*" chicanery; unassuming in his deportment; unobtrusive of his opinions. In his domestic relations, he was a most affectionate son, a devoted husband, a kind father. In consultation, he expressed his opinions with meekness and firmness; when he felt assured that he was on the right side, he never swerved from them, while, at the same time, he was courteous to those who differed. His counsel was often sought for by his brethren, as he was considered a man of great experience, and of the soundest judgment.

Such is a very imperfect outline of the career and character of our departed friend; such the example he has left for our imitation. The cold portals of the tomb have forever closed over his mortal body in silence and in darkness; but they cannot shut out the memory of his good deeds, nor obscure the brightness of his example. "Brief is the space allotted to man upon earth; but the memory of a life, nobly rendered, is immortal."

Digitized by Google

ARTICLE XXII.

List of Honorary Members of the Medical Society of the State of New York.

[The election of Honorary Members is authorized by statute. The Society, in its by-laws, after declaring that certain individuals shall be Honorary Members, by virtue of their present or previous offices, has directed that only two Honorary Members shall be annually elected, having been nominated at least a year previous.]

On motion of Dr. Staats, it was

Resolved, To elect to honorary membership non-residents of the State of New York only.

By Dr. B. Fordyce Barker :

Resolved, That section fifteen of the by-laws be amended in accordance with the report of the committee, striking out the word *two* and inserting the word *six*, so as to elect not more than six Honorary Members yearly.

[Transactions 1859, page 412.]

		Elected February.
Drs.	*Benjamin Rush, Philadelphia. Obiit April 13, 1813. Æt. 68	1808
	*Nathan Smith, New Haven. Obiit 1829. Æt. 67	1808
	*John Pomeroy, Burlington, Vt. Obiit 1844	1808
	*John Miller, Truxton, N. Y. Obiit March 30, 1862. Æt. 87	1808
	*Moses Willard, Albany, N. Y. Obiit Dec. 6, 1826. Æt. 66	1808
	*John Warren, Boston. Obiit April 4, 1815. Æt. 62	1810
Rev.	*Alexander Proudfit, Salem, N. Y. Obiit 1844. Æt. 75	1810
Drs.	*Samuel L. Mitchill, N. Y. Obiit Sept. 7, 1831. Æt. 67	1811
	*David Hosack, N. Y. Obiit Dec. 22, 1835. Æt. 66	1811
	*Nicholas Romayne, N. Y. Obiit July 20, 1817. Æt. 61	1812
	*John Stearns, New York. Obiit 1849. Æt. 78	1812
	*Lyman Spalding, N. Y. Obiit October 31, 1821. Æt. 46	1819
	*George C. Shattuck, Boston. Obiit March 18, 1854. Æt. 70	1819
	*James Hadley, Buffalo, New York. Obiit Oct. 17, 1869. Æt. 84	1817
	*John Murray, Esq., Edinburgh	1817
	*Wright Post, New York. Obiit June 14, 1828. Æt. 61	1819
	*John C. Warren, Boston. Obiit May 4, 1856. Æt. 78	1819
	*Valentine Mott, New York. Obiit April 26, 1865. Æt. 79	1820
	*Josiah Noyes, Hamilton, Coll., Oneida. Obiit 1853. Æt. 77	1823
	*Nathaniel Chapman, Philadelphia. Obiit July 1, 1853. Æt. 73	1823
	*Daniel Drake, Cincinnati. Obiit Nov. 6, 1852. Æt. 67	1824
	*John D. Henry, Rochester, New York	1824
	*Philip S. Physick, Philadelphia. Obiit Dec. 15, 1837. Æt. 70	1825
	*Joseph Adams Gallup, Burlington, Vt. Obiit Oct. 1849. Æt. 80	1825
	*Joseph Lovell, U. S. A., Washington, D. C. Obiit Oct. 17, 1836	1827
	*John Onderdonk, New York. Obiit 1832	1827
	John Lizars, Edinburgh	1828
	*William Hammersley, New York. Obiit 1853	1828
	*Samuel White, Hudson, N. Y. Obiit 1845. Æt. 68	1829
	*J. Augustine Smith, Virginia. Obiit Feb. 9, 1865. Æt. 83	1829
	*Eli Ives, Connecticut. Obiit 1861. Æt. 83	1830
	*John W. Gloninger, Lebanon, Pennsylvania	1830
	*George McClellan, Philadelphia. Obiit May 8, 1847. Æt. 51	1831
	*Eli Todd, Connecticut. Obiit Nov. 17, 1833. Æt. 64	1831
	*Thomas C. James, Philadelphia. Obiit July 25, 1835. Æt. 69	1832
	*Thomas W. Henry, Brooklyn, N. Y.	1832

* Deceased.

Digitized by Google

		Elected February.
Drs.	*Reuben D. Mussey, Ohio. Obiit June 21, 1866. Æt. 86	1833
	Walter Channing, Boston, Massachusetts	1833
	*James Conquest Cross, Kentucky	1834
	*Alfred T. Magill, Winchester, Virginia	1834
	*Samuel Jackson, Philadelphia. Obiit April 6, 1872. Æt. 85	1835
	*John Eberle, Ohio. Obiit Feb. 2, 1838. Æt. 50	1835
	*Robley Dunglison, Philadelphia. Obiit April 1, 1869. Æt. 71	1836
	*Thomas Sewall, Washington, D. C. Obiit Sept. 10, 1845. Æt. 59	1836
	*Luther V. Bell, Mass. Obiit Feb. 11, 1862. Æt. 55	1837
	*Charles D. Meigs, Pennsylvania. Obiit 1869	1837
	*Daniel Oliver, New Hampshire. Obiit 1842. Æt. 56	1838
	*William Tully Conn. Obiit March, 1859. Æt. 74	1838
	Jacob Bigelow, Boston, Massachusetts	1839
	*Jonathan Knight, New Haven, Conn. Obiit Aug. 25, 1864. Æt. 75	1839
	Placido Portal, Palermo	1840
	George B. Wood, Philadelphia	1840
	*Hugh L. Hodge, Pennsylvania	1841
	*Benjamin W. Dudley, Lexington, Ky. Obiit Jan. 20, 1870. Æt. 80	1841
	Jerome V. C. Smith, New York city	1842
	Isaac Hayes, Philadelphia, Penn	1842
	*Enoch Hale, Boston. Obiit 1848	1843
	Willard Parker, New York	1843
	*Amariah Brigham, N. Y. Obiit Sept. 9, 1849. Æt. 51	1844
	*John S. Peters, Connecticut. Obiit 1858	1844
	*Lewis C. Beck, N. J. Obiit April 20, 1853. Æt. 55	1845
	*Landon C. Rives, Cincinnati, Ohio. Obiit June 3, 1870. Æt. 79	1845
	*Mat. Stevenson, Newburgh, Orange county, N. Y	1846
	*Alexander H. Stevens, New York. Obiit March 30, 1869. Æt. 79	1846
	*Seth Hastings, Oneida county, N. Y	1847
	*Henry H. Childs, Pittsfield, Mass. Obiit March 22, 1868. Æt. 84	1847
	Woodbridge Strong, Boston, Mass	1848
	*Frederic May, Washington, D. C. Obiit Jan. 23, 1847. Æt. 74	1848
	Alonzo Clark, New York	1849
	*Joseph Parrish, Philadelphia. Obiit March 18, 1840. Æt. 60	1849
	*Stephen Mosher, Cincinnati	1851
	George W. Norris, Philadelphia	1852
	Samuel S. Purple, New York	1852
	Abram Sager, Michigan	1853
	*John W. Francis, New York. Obiit Feb. 8, 1861. Æt. 72	1853
	*John P. Batchelder, New York. Obiit April 7, 1868. Æt. 82	1854
	Henry L. Sabin, Williamstown, Mass	1854
	*Marshall Hall, London	1855
	Horace A. Buttolph, Trenton, New Jersey	1855
	Samuel D. Gross, Philadelphia	1856
	*Charles Hooker, New Haven, Conn. Obiit March 19, 1863. Æt. 64	1856
	John Rolph, Toronto, C. W	1857
	Henry Julian Hunter, Sheffield, Eng	1857
	*Marshall S. Perry, Boston. Obiit 1859	1858
	*Samuel Henry Dickson, Charleston, S. C. Obiit March 31, 1872. Æt. 74	1858
	Silas Durkee, Boston	1859
	*John De La Mater, Cleveland, O. Obiit March 28, 1867	1859
	Alfred Stille, Philadelphia	1860
	George Mendenhall, Cincinnati, O	1860
	*J. Mason Warren, Boston. Obiit August 19, 1867. Æt. 56	1860
	*Warren Stone, New Orleans, La	1860
	Ernest Hart, London, Eng	1860

*Deceased.

Digitized by Google

		Elected February.
Drs.	Benjamin Hopkins Catlin, Meriden, Conn	1860
	James R. Wood, New York	1861
	*Zina Pitcher, Detroit, Michigan. Obiit April 5, 1872. Æt. 75	1861
	*Dixi Crosby, Hanover, New Hampshire	1861
	Pliny A. Jewett, New Haven, Conn	1861
	D. Humphreys Storer, Boston, Mass	1861
	W. Frazer, Montreal, C. W	1861
	*T. G. Geoghegan, Dublin. Obiit December, 1869	1862
	Ashbel Woodward, Franklin, Conn	1862
	John Jeffries, Boston	1862
	William Carpenter, London	1862
	Henry Bronson, New Haven, Conn	1862
	John M. Cuyler, U. S. Army	1863
	W. Braithwaite, London	1863
	Thomas Jennings, Nashville, Tenn	1863
	Pinckney Webster Ellsworth, Hartford, Conn	1863
	R. S. Satterlee, U. S. Army	1863
	*Samuel W. Butler, Philadelphia	1863
	William W. Rutherford, Harrisburg, Penn	1864
	J. Adams Allen, Michigan	1864
	Oliver P. Hubbard, Hanover, N. H	1864
	William J. Sloan, U. S. Army	1864
	Stephen Wickes, Orange, N. J	1864
	*James Couper, Newcastle, Del. Obiit August, 1865	1864
	*Wilson Jewell, Philadelphia. Obiit November 4, 1867. Æt. 67	1865
	*Josiah G. Beckwith, Litchfield, Conn. Obiit March 21, 1871. Æt. 68	1865
	*Lyndon A. Smith, Newark, N. J. Obiit December 15, 1865. Æt. 70	1865
	*Charles S. Tripler, U. S. A. Obiit October 20, 1866	1865
	*Charles A. Pope, St. Louis, Mo. Obiit July 5, 1870	1865
	Alonzo B. Palmer, Ann Arbor, Michigan	1865
	Samuel W. Thayer, Burlington, Vt	1866
	N. S. Davis, Chicago, Ill	1866
	Albert Smith, Peterboro, N. H	1866
	C. E. Brown Séquard, Cambridge, Mass	1867
	Middleton Goldsmith, Louisville, Ky	1867
	*N. D. Benedict, St. Augustine, Fla. Obiit April 1871	1868
	Joseph K. Barnes, Surgeon-General U. S. A	1868
	Isaac Ray, Providence, R. I	1868
	Thomas S. Kirkbride, Philadelphia	1868
	*Sir James Y. Simpson, Scotland. Obiit May 8, 1870. Æt. 59	1869
	Theodore R. Varick, Jersey City	1869
	Henry S. West, Asia Minor	1870
	Ralph Isham, Chicago	1870
	Joseph Carson, Philadelphia	1870
	Wm. Henry Thayer, Brooklyn, N. Y	1870
	Wm. Warren Greene, Portland, Me	1870
	H. M. Knight, Lakeville, Conn	1870
	Wm. H. Byford, Chicago, Ill	1871
	Edwin M. Snow, Providence, R. I	1871
	Wilmer Worthington, Westchester Pa	1871
	William McCollom, Brooklyn, N. Y	1871
	John H. Webb, Galveston, Texas	1871
	E. K. Hunt, Hartford, Conn	1871
	M. Nelaton, Paris, France	1872
	Rudolph Virchow, Berlin, Prussia	1872
	Robert Stokes, Dublin, Ireland	1873

* Deceased.

Digitized by Google

		Elected February.
Drs.	Rawdon McNamara, Dublin, Ireland	1873
	Joseph Meredith Jones, Washington, D. C	1873
	H. C. Lombard, Geneva, Switzerland	1873
	J. Matthews Duncan, Edinburgh, Scotland	1874
	Washington L. Atlee, Philadelphia, Pa	1874
	William Boeck, Christiana, Norway	1874
	Benjamin W. Richardson, London, England	1874
	Joseph K. Brown, U. S. Army	1874
Mr.	T. Spencer Wells, London, England	1874

Digitized by Google

ARTICLE XXIII.

List of Permanent Members.

[*Statute passed February* 6, 1845. It shall and may be lawful for the Medical Society to elect, annually, such a number of permanent members as they may, from time to time, determine by their by-laws, not to exceed two annually from any one senatorial district.]

Resolutions adopted by the State Medical Society:

Resolved, That in case of the death of a member of this Society, it shall be the duty of the nearest censor, in the district in which he resided, to transmit to the secretary a professional obituary, of suitable length, for publication in the Transactions of the Society.

Resolved, That it shall be the duty of the secretary to cause to be published, in the yearly Transactions of this Society, a list of living members thereof, with the above resolution appended thereto; and at each meeting to call the roll of members, and if any are reported as having died during the year, the presiding officer shall appoint some member to perform the above duty. (Trans. 1849, p. 93.)

Resolution adopted February, 1873:

Resolved, That candidates elected to permanent membership, who neglect to pay the fee required by our by-law, for one year from the date of their election, shall forfeit their rights as permanent members.

	Names.	County.	Year.
Drs.	*Nicholas Romayne, Obiit July 20, 1817. Æt. 61	New York	1813
	*Samuel Bard, Obiit May 24, 1821. Æt. 79	New York	1813
	*William Wilson, Obiit 1829	Columbia	1814
	*John Stearns, Obiit, 1848. Æt. 75	Albany	1814
	*Charles D. Townsend, Obiit Dec. 19, 1847. Æt. 69	Albany	1815
	*John Ely	Greene	1815
	*Westel Willoughby, Newport, Obiit Oct. 3, 1844. Æt. 75.	Herkimer	1816
	*David Hosack, Obiit Dec. 22, 1835. Æt. 67	New York	1816
	*Samuel L. Mitchill, Obiit Sept. 7, 1831. Æt. 67	New York	1817
	*T. Romeyn Beck, Obiit Nov. 19, 1855. Æt. 64	Albany	1817
	*Joseph White, Cherry Valley, Obiit June 2, 1832. Æt. 70.	Otsego	1818
	*Cornelius E. Depuy, Obiit 1822. Æt. 30	New York	1818
	*William Bay, Obiit Sept. 7, 1865. Æt. 91	Albany	1819
	*Lyman Spalding, Obiit Oct. 31, 1821. Æt. 46	New York	1819
	*Felix Pascalis, Obiit July 27, 1833. Æt. 71	New York	1820
	*Amos G. Hull	Oneida	1820
	*Charles Drake, Obiit 1832	New York	1821
	*Peter Wendell, Obiit Oct. 31, 1849. Æt. 63	Albany	1821
	*Jas. R. Manly, Obiit Nov. 21, 1851. Æt. 69	New York	1822
	*Alex. Coventry, Utica, Obiit Dec. 9, 1831. Æt. 65	Oneida	1822
	*Luther Guiteau, Trenton, Obiit 1850	Oneida	1823
	*Thomas Brodhead, Clermont, Obiit 1830. Æt. 65	Columbia	1823
	*John H. Steel	Saratoga	1824
	*Laurens Hull, Angelica, Obiit June 27, 1865. Æt. 86	Allegany	1824
	*Jonathan Eights, Obiit Aug. 10, 1848. Æt. 75	Albany	1825
	*Henry Mitchell, Norwich, Obiit Jan. 12, 1856. Æt. 72	Chenango	1825

* Deceased. [I shall be obliged to any person who will forward to me information of the place of residence of any permanent or honorary member not now recorded; and the age and time of death of any deceased member or person who has received the honorary degree on recommendation of this Society.—W. H. BAILEY, Secretary, Albany.]

Digitized by Google

	Names.	County.	Year.
Drs.	*John Watts, Jr., Obiit February 4, 1831. Æt. 45.....	New York.....	1826
	*Daniel Ayers, Amsterdam, Obiit May 25, 1853. Æt. 66..	Montgomery	1826
	*John C. Cheeseman, Obiit Oct. 11, 1862. Æt. 75.....	N. Y. city.....	1827
	*Platt Williams, Obiit Dec. 8, 1870.....	Albany	1828
	*Richard Pennel, Obiit April 11, 1861. Æt. 62.....	N. Y. city.....	1828
	*John B. Beck, Obiit April 9, 1851. Æt. 56.....	New York.....	1829
	*H. W. Doolittle, Herkimer, Obiit 1853. Æt. 64.....	Herkimer.....	1829
	*Moses Hale, Troy, Obiit Jan. 3, 1837. Æt. 57.....	Rensselaer.....	1830
	*Alpheus S. Greene, Watertown, Obiit Feb. 25, '51. Æt. 64.	Jefferson	1830
	Edward G. Ludlow, Yonkers.....	Westchester.....	1831
	*James McNaughton, Albany, Obiit June 11, '74. Æt. 78.	Albany	1831
	*Joel A. Wing, Obiit Sept. 6, 1852. Æt. 64.....	Albany.....	1832
	Joel Foster, New York City.....	New York.....	1832
	John G. Morgan, St. Louis.....	.....	1833
	*Samuel White, Hudson, Obiit 1845. Æt. 68.....	Columbia	1833
	*William Taylor, Manlius, Obiit Sept. 16, 1865. Æt. 74...	Onondaga.....	1834
	*William Horton, Jr., Goshen	Orange	1834
	*Thomas Spencer, Geneva, Obiit May 30, 1857. Æt. 65...	Ontario.....	1835
	*Samuel McClellan, Schodack, Obiit April 8, 1855. Æt. 68.	Rensselaer.....	1835
	*Sumner Ely, Clarksville, Obiit Feb. 3, 1857. Æt. 70.....	Otsego.....	1836
	*Robert G. Frary, Hudson, Obiit Dec. 29, 1862. Æt. 69 ...	Columbia	1836
	*Bryant Burwell, Buffalo,.....	Erie.....	1837
	*Calvin W. Smith, Obiit 1839.....	Herkimer.....	1837
	*A. G. Benedict, Red Hook, Obiit Oct. 4, 1862. Æt. 72...	Dutchess	1838
	*John McCall, Utica, Obiit Oct. 6, 1867. Æt. 80.....	Oneida	1838
	*Phineas Hurd	Cayuga.....	1839
	Eli Pearce, Athens.....	Greene	1839
	*John McClellan, Hudson, Obiit Oct. 18, 1855. Æt. 83....	Columbia.	1840
	Charles S. J. Goodrich.....	New York city.....	1840
	Charles B. Coventry, Utica.....	Oneida.....	1841
	*Peter Van O'Linda, Albany, Obiit August 1872.....	Albany	1841
	*Chandler R. Gilman, New York city, Obiit Sept. 26, 1865. Æt. 63.....	New York	1842
	Lake I. Tefft, Syracuse	Onondaga.....	1842
	*Lester Green, Little Falls, Obiit Feb. 7, 1849. Æt. 52...	Herkimer.....	1843
	*E. B. Burrows, Lebanon	Madison.....	1843
	*John R. Rhinelander, Obiit May 8, 1857. Æt. 65.....	New York	1844
	Henry Maxwell.....	Niagara	1844
	*Thomas W. Blatchford, Troy, Obiit Jan. 7, 1866. Æt. 71.	Rensselaer.....	1845
	*Augustus Willard, Greene, Obiit March 12, 1868. Æt. 69.	Chenango.....	1845
	Stephen H. Hasbrouck.....	New York	1845
	*Merritt H. Cash, Ridgebury, Obiit April 26, 1861. Æt. 59.	Orange	1845
	Ferris Jacobs, Delhi.....	Delaware	1845
	*John R. Brown, Little Falls,.....	Herkimer.....	1845
	Reuben Goodale, Watertown.....	Jefferson	1845
	William D. Purple, Greene.....	Chenango.....	1845
	*Alexander Thompson, Aurora, Obiit Sept. 21, 1869. Æt. 60.....	Cayuga.....	1845
	Charles Winne, Buffalo.....	Erie.....	1845
	*Henry Van Hovenburgh, Kingston, Obiit July 27, 1868. Æt. 77.....	Ulster	1846
	James Fountain, Jefferson Valley.....	Westchester.....	1846
	John H. Wheeler, Athens.....	Greene	1846
	*Simeon Snow, Root, Obiit Sept. 20, 1865. Æt. 62.....	Montgomery.....	1846
	Benjamin E. Bowen, Mexico.....	Oswego.....	1846
	N. S. Davis, Chicago, Ill.....	.....	1846

* Deceased.

Digitized by Google

	Names.	County.	Year.
Drs.	Harman Van Dusen, Tully	Onondaga	1846
	Maltby Strong, Rochester	Monroe	1846
	Willard Parker, New York city	New York	1847
	Edmund F. Grant	Dutchess	1847
	*Alden March, Albany, Obiit June 17, 1869. Æt. 73	Albany	1847
	*Truman B. Hicks	Warren	1847
	*Thomas Goodsell, Utica, Obiit Jan. 12, 1864. Æt. 83	Oneida	1847
	*Nelson Winton, Havana, Obiit Aug. 27, 1824. Æt. 64	Schuyler	1847
	George W. Bradford, Homer	Cortland	1847
	*Alden S. Sprague, Buffalo, Obiit Jan. 8, 1863. Æt. 62	Erie	1847
	Richard A. Varick, Poughkeepsie	Dutchess	1848
	*Peter Van Buren, New York city, Obiit Dec. 5, 1873. Æt. 71	New York	1848
	*Wm. S. Norton, Ft. Edward, Obiit Feb. 20, 1873. Æt. 67.	Washington	1848
	Jenks S. Sprague, Cooperstown	Otsego	1848
	Denison R. P , Sherwood's	Cayuga	1848
	*J. Edwin Hawley, Ithaca, Obiit August 1, 1859. Æt. 57.	Tompkins	1848
	*Alexander H. Stephens, N. York city, Obiit March 30, 1869. Æt. 79	New York	1848
	*John M. Pruyn, Kinderhook, Obiit Feb. 1866. Æt. 60	Columbia	1849
	Morgan Snyder, Fort Plain	Montgomery	1849
	*Patrick H. Hard, Oswego	Oswego	1849
	Dyer Loomis, New Berlin	Chenango	1849
	Enos Barnes, Geneva	Ontario	1849
	Alonzo Clark, New York city	New York	1850
	*Nathaniel Miller	Suffolk	1850
	*Thomas C. Brinsmade, Troy, Obiit June 22, 1868. Æt. 66.	Rensselaer	1850
	Hiram Corliss, Greenwich	Washington	1850
	Helon F. Noyes, Stillwater	Minnesota	1850
	S. H. French, Lisle	Broome	1850
	*Daniel T. Jones, Baldwinsville, Obiit March 29, 1861. Æt. 60	Onondaga	1850
	Seth H. Pratt	Allegany	1850
	*Barent P. Staats, Albany, Obiit July 9, 1871. Æt. 74	Albany	1850
	*Bartow White, Fishkill, Obiit Dec. 11, 1862. Æt. 87	Dutchess	1851
	Orson M. Allaben, Middletown	Delaware	1851
	Joseph White, Canajoharie	Montgomery	1851
	Daniel G. Thomas, Utica	Oneida	1851
	*Silas West, Binghamton, Obiit Aug. 27, 1859, Æt. 67	Broome	1851
	John E. Todd, Philadelphia, Pa		1851
	Frank H. Hamilton, New York city	New York	1851
	James H. Armsby, Albany	Albany	1852
	Samuel Shumway, Essex	Essex	1852
	*Nicoll H. Dering, Utica, Obiit Dec. 19, 1867. Æt. 73	Oneida	1852
	*Royal Ross	Chenango	1852
	Jehiel Stearns, Pompey	Onondaga	1852
	Charles E. Ford, Batavia	Genesee	1852
	*Benjamin Drake, Obiit Jan. 11, 1871. Æt. 65	New York	1853
	Joseph Bates, Lebanon Springs	Columbia	1853
	*A. Van Dyck, Obiit 1871	Oswego	1853
	*Phineas H. Burdick, Preble, Obiit Mar. 28, 1870. Æt. 69.	Cortland	1853
	James M. Gardiner, Newburgh	Orange	1853
	*A. F. Doolittle, Herkimer, Obiit 1872	Herkimer	1853
	*Erastus L. Hart, Elmira, Obiit Oct. 22, 1871. Æt. 84	Chemung	1853
	George N. Burwell, Buffalo	Erie	1853
	Thomas F. Cock, New York city	New York	1854

* Deceased.

Digitized by Google

	Names.	County.	Year.
Drs.	*Wm. Rockwell, New York city, Obiit Dec. 30, 1868. Æt. 68	New York	1854
	*Charles A. Lee, Peekskill, Obiit Feb. 14, 1872. Æt. 71	Westchester	1854
	*L. S. Turner, Fallsburgh, Obiit 1860. Æt. 49	Sullivan	1854
	Thomas Hun, Albany	Albany	1854
	James Thorn, Troy	Rensselaer	1854
	Oliver Brisbin, Schuylerville	Saratoga	1855
	*Henry Reynolds, Wilton, Obiit Dec. 20, 1857. Æt. 68	Saratoga	1854
	*Arba Blair, Rome, Obiit June 20, 1863. Æt. 82	Oneida	1854
	F. T. Maybury, Binghamton	Broome	1854
	*Azariah B. Shipman, Syracuse, Obiit Sept. 15, 1868. Æt. 65	Onondaga	1854
	Frederick Hyde, Cortlandville	Cortland	1854
	John R. Smith, Riga	Monroe	1854
	James P. White, Buffalo	Erie	1854
	George Burr, Binghamton	Broome	1854
	W. G. Sands, Oxford	Chenango	1854
	James R. Wood, New York city	New York	1855
	B. Fordyce Barker, New York city	New York	1855
	Philander Stewart, Peekskill	Westchester	1855
	G. C. Monell, Newburgh	Orange	1855
	Alfred Wotkyns, Troy	Rensselaer	1855
	*Ebenezer Steele, Delhi, Obiit 1856	Delaware	1855
	*Freeman Tourtelot, Middlegrove, Obiit Dec. 14, 1868. Æt. 62	Saratoga	1855
	Henry C. Gray, N. White Creek	Washington	1855
	Luther Guiteau, Jr., Trenton	Oneida	1855
	Augustus L. Saunders, Brookfield	Madison	1855
	Marcena Perry, Painted Post	Steuben	1855
	A. B. Case, Howard	Steuben	1855
	John Coventry	Wayne	1855
	*Edson Carr, Canandaigua, Obiit Nov. 28, 1861. Æt. 60	Ontario	1855
	Austin Flint, New York city	New York.	1855
	*John Cotes, Batavia, Obiit Feb. 26, 1859. Æt. 64	Genesee	1855
	*James L. Phelps, New York city, Obiit Oct. 17, 1869. Æt. 84	Genesee	1855
	*Horace Green, New York city, Obiit Nov. 29, 1866. Æt. 63	New York	1856
	D. C. Winfield, Middletown	Orange	1856
	*Howard Townsend, Albany, Obiit Jan. 15, 1867. Æt. 43.	Albany	1856
	Elbridge Simpson, Hudson	Columbia	1856
	Jacob G. Snell, Amsterdam	Montgomery	1856
	Abram Haun, Little Falls	Herkimer	1856
	Daniel P. Bissell, Utica	Oneida	1856
	Peter McNaughton, Albany	Albany	1856
	John Gay Orton, Binghamton	Broome	1856
	*Jotham Purdy, Elmira, Obiit Aug. 11, 1858. Æt. 59	Chemung	1856
	James V. Kendall, Clay	Onondaga	1856
	J. P. Dunlap, Onondaga	Onondaga	1856
	*Fred. F. Backus, Rochester, Obiit Nov. 4, 1858. Æt. 64.	Monroe	1856
	E. W. Armstrong, Rochester	Monroe	1856
	Stephen Smith, New York	New York	1857
	Samuel Hart, Brooklyn	Kings	1857
	George J. Fisher, Sing Sing	Westchester	1857
	Wm. S. Preston, Patchogue	Suffolk	1857
	* C. V. W. Burton, Lansingburgh, Obiit Sept. 23, 1860. Æt. 50	Rensselaer	1857

* Deceased.

Digitized by Google

	Names.	County.	Year.
Drs.	*Mason F. Cogswell, Albany, Obiit Jan. 21, 1854. Æt. 54.	Albany	1857
	James Diefendorf, Fort Plain	Montgomery	1857
	*Abel Green, Paine's Hollow, Obiit 1862	Herkimer	1857
	Gilson A. Dayton, Mexico	Oswego	1857
	M. M. Bagg, Utica	Oneida	1857
	*Levi Farr, Greene, Obiit July 18, 1859. Æt. 72	Chenango	1857
	J. C. Morse, Sabula, Iowa		1857
	*A. F. Oliver, Penn Yan, Obiit 1857. Æt. 65	Yates	1857
	Jonathan Kneeland, South Onondaga	Onondaga	1857
	Francis L. Harris, Buffalo	Erie	1857
	Sandford B. Hunt, Buffalo	Erie	1857
	Ed. H. Parker, Poughkeepsie	Dutchess	1858
	Nathaniel C. Husted, New York	New York	1858
	William W. Strew, Oyster Bay	Queens	1858
	William Govan, Stony Point	Rockland	1858
	*Sylvester D. Willard, Albany, Obiit April 2, 1865. Æt. 39.	Albany	1858
	*Edward Hall, Auburn, Obiit 1870	Cayuga	1858
	William Tibbitts, Mechanicville	Saratoga	1858
	Tabor B. Reynolds, Saratoga Springs	Saratoga	1858
	Charles G. Bacon, Fulton	Oswego	1858
	James M. Sturtevant, Rome	Oneida	1858
	Seneca Beebe, McDonough	Chenango	1858
	Alfred Bolter, Ovid	Seneca	1858
	Caleb Green, Homer	Cortland	1858
	Warren Fay, Pavilion	Genesee	1858
	Waterman Ellsworth	Chautauqua	1858
	*Franklin Tuthill, San Francisco, Cal., Obiit Aug. 27, 1865,		1859
	John Ball, Brooklyn	Kings	1859
	Seth Shove, Katonah	Westchester	1859
	Moses C. Hasbrouck, Nyack	Rockland	1859
	James P. Boyd, Albany	Albany	1859
	Horace K. Willard, Catskill	Greene	1859
	*Uriah Potter, Fort Plain, Obiit Dec. 16, 1869. Æt. 60	Montgomery	1859
	*Richard L. Allen, Saratoga Springs	Saratoga	1859
	Henry N. Porter, New York Mills	Oneida	1859
	John Putnam, Madison	Madison	1859
	*C. Milford Crandell, Belfast, Obiit Oct. 4, 1867. Æt. 41	Allegany	1859
	*Stephen Hagadorn, Cohocton, Obiit Aug. 1, 1863. Æt. 52	Steuben	1859
	Alexander J. Dallas, Camillus	Onondaga	1859
	*John F. Trowbridge, Syracuse, Obiit 1872	Onondaga	1859
	Phineas H. Strong, Buffalo	Erie	1859
	Horace M. Conger, Buffalo	Erie	1859
	*John H. Griscom, New York	New York	1860
	Elisha Harris, New York	New York	1860
	John Demarest, Spring Valley	Rockland	1860
	William P. Townsend, Goshen	Orange	1860
	S. Oakley VanderPoel, Albany	Albany	1860
	William P. Seymour, Troy	Rensselaer	1860
	*Darius Clark, Canton, Obiit Jan. 23, 1871. Æt. 72	St. Lawrence	1860
	*Benjamin J. Mooers, Plattsburgh, Obiit May 20, 1869. Æt. 82	Clinton	1860
	V. W. Mason, Canastota	Madison	1860
	*Charles Barrows, Clinton, Obiit Oct. 2, 1870	Oneida	1860
	Pelatiah B. Brooks, Binghamton	Broome	1860
	James H. Jerome, Trumansburgh	Tompkins	1860
	*M. M. Marsh, Manlius	Onondaga	1860

* Deceased.

Digitized by Google

	Names.	County.	Year.
Drs.	Harvey Jewett, Canandaigua	Ontario	1860
	*C. H. Wilcox, Buffalo	Erie	1860
	Levant B. Cotes, Batavia	Genesee	1860
	John G. Adams, New York city	New York	1861
	John McNulty, New York city	New York	1861
	C. W. Haight, Pleasantville	Westchester	1861
	J. Foster Jenkins, Yonkers	Westchester	1861
	John V. P. Quackenbush, Albany	Albany	1861
	Reed B. Bontecou, Troy	Rensselaer	1861
	*James Lee, Mechanicville, Obiit April 13, 1866. Æt. 47	Saratoga	1861
	A. E. Varney, Little Falls	Herkimer	1861
	*Franklin Everts, Oswego, Obiit Feb. 12, 1864. Æt. 36	Oswego	1861
	Austin White, Mexico	Oswego	1861
	Charles S. Wood, Greene	Chenango	1861
	C. M. Kingman, McGrawville	Cortland	1861
	Nelson Nivison, Hector	Schuyler	1861
	Joseph N. Northrop, Albany	Albany	1861
	Charles C. F. Gay, Buffalo	Erie	1861
	Edward R. Squibb, Brooklyn	Kings	1861
	E. R. Peaslee, New York city	New York	1862
	Thomas C. Finnell, New York	New York	1862
	Abraham Crispell, Rondout	Ulster	1862
	John D. Watkins, Liberty	Sullivan	1862
	S. M. Van Alstyne, Richmondville	Schoharie	1862
	Samuel H. Freeman, Albany	Albany	1862
	Theo. L. Mason, Brooklyn	Kings	1862
	H. A. Carrington, New Haven, Conn		1862
	J. V. Cobb, Rome	Oneida	1862
	A. G. Purdy, Oneida	Madison	1862
	*P. Brooks, Binghamton, Obiit March 2, 1864. Æt. 39	Broome	1862
	E. S. Lyman, Sherburne	Chenango	1862
	Harvey B. Wilbur, Syracuse	Onondaga	1862
	Joseph Beattie, Geneva	Ontario	1862
	John Boardman, Buffalo	Erie	1862
	*Charles E. Van Anden, Auburn, Obiit Oct. 19, 1873. Æt. 54	Cayuga	1862
	Henry S. Downs, New York city	New York	1863
	*Henry D. Bulkley, New York city, Obiit January 4, 1872. Æt. 67	New York	1863
	Lewis F. Pelton, Mount Kisko,	Westchester	1863
	John R. Cooper, Poughkeepsie	Dutchess	1863
	Jacob Newkirk, Roxbury	Delaware	1863
	John Swinburne, Albany	Albany	1863
	James Ferguson, Glen's Falls	Warren	1863
	Alexander Ayres, Fort Plain	Montgomery	1863
	J. K. Chamberlayne, Utica	Oneida	1863
	Wm. H. H. Parkhurst, Frankfort	Herkimer	1863
	Geeorge Cook, Canandaigua	Ontario	1863
	C. V. Barnett, Windham Centre	Greene	1863
	Henry W. Dean, Rochester	Monroe	1863
	Douglas Bly, Rochester,	Monroe	1863
	Josiah Rathbun, Utica	Oneida	1863
	*Hiram Adams, Fabius, Obiit March 9, 1865. Æt. 62	Oneida	1863
	Joseph C. Hutchison, Brooklyn	Kings	1864
	S. A. Purdy	New York	1864
	*Peter Moulton, New Rochelle, Obiit Dec. 7, 1873. Æt. 79.	Westchester	1864

* Deceased.

Digitized by Google

	Names.	County.	Year.
Drs.	Charles McMillan, Fordham	Westchester	1864
	William H. Bailey, Albany	Albany	1864
	A. D. Hull, Lansingburgh	Rensselaer	1864
	*J. H. Reynolds, Wilton, Obiit April 3, 1870. Æt. 42	Saratoga	1864
	H. S. Chubbuck, Elmira	Chemung	1864
	James S. Whaley, Rome	Oneida	1864
	Samuel G. Wolcott, Utica	Oneida	1864
	William H. Fish, Mecklenburgh	Schuyler	1864
	E. M. Alba, Angelica	Allegany	1864
	Samuel Avery, Baldwinsville	Onondaga	1864
	J. Towler, Geneva	Ontario	1864
	John Root, Batavia	Genesee	1864
	Solomon Barrett, Leroy	Genesee	1864
	Oliver White, New York city	New York	1865
	James M. Minor, Brooklyn	Kings	1865
	John W. Green, New York city	New York	1865
	Edmund S. F. Arnold, Yonkers	Westchester	1865
	Peter P. Staats, Albany	Albany	1865
	John Ferguson, Albany	Albany	1865
	Griffin Sweet, Fairfield	Herkimer	1865
	Asa D. Hammond, Essex	Essex	1865
	John P. Gray, Utica	Oneida	1865
	Jacob Hunt, Utica	Oneida	1865
	Marcus M. Wood, Greene	Chenango	1865
	*Uriah G. Bigelow, Albany, Obiit Feb. 23, 1873	Albany	1865
	E. W. Bottum, Lyons	Wayne	1865
	Julien T. Williams, Dunkirk	Chautauqua	1865
	Isaac E. Taylor, New York city	New York	1865
	Sandford Eastman, Buffalo	Erie	1865
	Guido Furman, New York city	New York	1866
	A. N. Bell, Brooklyn	Kings	1866
	John Ordronaux, Roslyn	Queens	1866
	E. L. Beadle, Poughkeepsie	Dutchess	1866
	Gideon Botsford, Greenville,	Greene	1866
	C. C. Covel, Stamford	Delaware	1866
	Thompson Burton, Fultonville	Montgomery	1866
	E. W. Howard, Warrensburgh	Warren	1866
	Isaac H. Douglass, Utica	Oneida	1866
	J. E. Casey, Mohawk	Herkimer	1866
	H. K. Bellows, Norwich	Chenango	1866
	William H. Richardson, Westport	Essex	1866
	Israel Parsons, Marcellus	Onondaga	1866
	Samuel Gilmore, Fleming	Cayuga	1866
	Lewis A. Sayre, New York city	New York	1866
	*William F. Carter, Cohoes, Obiit April 20, 1866. Æt. 54.	Albany	1866
	Jared Linsley, New York city	New York	1867
	*Alfred Underhill, New York city, Obiit Dec. 7, 1873. Æt. 65	New York	1867
	William L. Appley, Cochecton	Sullivan	1867
	William C. Anderson, Stapleton	Richmond	1867
	Levi Moore, Albany	Albany	1867
	Henry B. Salmon, Stuyvesant Falls	Columbia	1867
	Reuben Blawis, Fort Miller	Washington	1867
	Lyman Barton, Essex	Essex	1867
	H. S. Crandall, Leonardsville	Madison	1867
	Cornelius R. Agnew, New York city	New York	1867

* Deceased

Digitized by Google

	Names.	County.	Year.
Drs.	Devillo White, Sherburne	Chenango	1867
	Z. H. Blake, Dansville	Livingston	1867
	William Manlius Smith, Manlius	Onondaga	1867
	Darwin Colvin, Clyde	Wayne	1867
	H. H. Langworthy, Rochester	Monroe	1867
	C. C. Wyckoff, Buffalo	Erie	1867
	*William B. Bibbins, New York city, Obiit Jan. 16, 1871. Æt. 47	New York	1868
	Samuel T. Hubbard, New York city	New York	1868
	Clark A. Nicholson, Beekman	Dutchess	1868
	Lewis H. White, Fishkill	Dutchess	1868
	J. V. Lansing, Albany	Albany	1868
	J. R. Boulware, Albany	Albany	1868
	John P. Sharer, Little Falls	Herkimer	1868
	Israel I. Buckbee, Fonda	Montgomery	1868
	William Russell, Utica	Oneida	1868
	Alonzo Churchill, Utica	Oneida	1868
	E. G. Crafts, Binghamton	Broome	1868
	Evander Odell, Unadilla	Otsego	1868
	H. D. Didama, Syracuse	Onondaga	1868
	H. N. Eastman, Geneva	Ontario	1868
	John F. Whitbeck, Rochester	Monroe	1868
	David Little, Rochester	Monroe	1868
	John R. Van Kleeck, New York	New York	1869
	James L. Banks, New York	New York	1869
	Jacob S. Wigton, Spring Valley	Rockland	1869
	Darling B. Whitney, East Norwich	Queens	1869
	Charles H. Porter, Albany	Albany	1869
	Henry B. Whiton, Troy	Rensselaer	1869
	John J. Flint, Fort Edward	Washington	1869
	M. L. Finch, Jonesville	Saratoga	1869
	Wilson T. Bassett, Mount Vision	Otsego	1869
	James B. Murdoch, Oswego	Oswego	1869
	William C. Wey, Elmira	Chemung	1869
	S. H. Harrington, Chenango Forks	Broome	1869
	Daniel W. Burdick, Preble	Cortland	1869
	William T. Swart, Canandaigua	Ontario	1869
	M. W. Townsend, Bergen	Genesee	1869
	Julius F. Miner, Buffalo	Erie	1869
	Ellsworth Eliot, New York city	New York	1870
	Henry D. Noyes, New York city	New York	1870
	George F. Shrady, New York city	New York	1870
	James O. Van Hoevenburgh, Kingston	Ulster	1870
	William Lamont, Charlotteville	Schoharie	1870
	James L. Babcock, Albany	Albany	1870
	Francis Burdick, Johnstown	Fulton	1870
	William H. Craig, Albany	Albany	1870
	Robert Frazier, Camden	Oneida	1879
	Jacob S. Mosher, Albany	Albany	1870
	S. H. French, 2d, Lisle	Broome	1870
	J. W. Thompson, Watkins	Schuyler	1870
	H. C. Hendricks, McGrawville	Cortland	1870
	William S. Hoffman, Port Byron	Cayuga	1870
	Thomas F. Rochester, Buffalo	Erie	1870
	E. M. Moore, Rochester	Monroe	1870
	Thomas Addis Emmet, New York city	New York	1871

* Deceased.

Digitized by Google

	Names.	County.	Year.
Drs.	S. Fleet Spear, Brooklyn	Kings	1871
	J. L. Lamoree, Grahamville	Sullivan	1871
	R. Loughran, Kingston	Ulster	1871
	George H. Hubbard, Lansingburgh	Rensselaer	1871
	Nelson Fanning, Catskill	Greene	1871
	Hiram McNutt, Warrensburgh	Warren	1871
	B. F. Sherman, Ogdensburgh	St. Lawrence	1871
	Frank S. Lowe, Pulaski	Oswego	1871
	Walter Booth, Booneville	Oneida	1871
	L. Griffin, Binghamton	Broome	1871
	S. F. McFarland, Oxford	Chenango	1871
	Nathan R. Tefft, Onondaga Hill	Onondaga	1871
	James W. Wilkie, Auburn	Cayuga	1871
	William Van Pelt, Williamsville	Erie	1871
	R. C. Reynolds, Rochester	Monroe	1871
	Nathan Bozeman, New York	New York	1872
	James L. Little, New York	New York	1872
	M. R. Holbrook, Poughkeepsie	Dutchess	1872
	A. C. Hull, Olive	Ulster	1872
	Le Roy McLean, Troy	Rensselaer	1872
	P. V. S. Pruyn, Kinderhook	Columbia	1872
	Arthur S. Wolff, Dannemora	Clinton	1872
	Henry H. Green, Paine's Hollow	Herkimer	1872
	G. L. Halsey, Unadilla	Otsego	1872
	Edwin Hutchinson, Utica	Oneida	1872
	Joshua B. Graves, Corning	Steuben	1872
	T. H. Squire, Elmira	Chemung	1872
	Chas. G. Pomeroy, Newark	Wayne	1872
	C. C. Murphy, East Bloomfield	Ontario	1872
	Chas. E. Rider, Rochester	Monroe	1872
	Simeon T. Clark, Lockport	Niagara	1872
	Robert Newman, New York	New York	1873
	J. Marion Sims, New York	New York	1873
	T. Blanch Smith, Nyack	Rockland	1873
	Wm. H. Helm, Sing Sing	Westchester	1873
	Edward R. Hun, Albany	Albany	1873
	R. H. Ward, Troy	Rensselaer	1873
	John Parr, Buel	Montgomery	1873
	D. G. Dodge, Rouse's Point	Clinton	1873
	H. G. P. Spencer, Watertown	Jefferson	1873
	Wm. L. Baldwin, Utica	Oneida	1873
	J. S. Dolson, Bath	Steuben	1873
	Wm. Fitch, Dryden	Tompkins	1873
	George W. Earll, Skaneateles	Onondaga	1873
	E. W. Simmons, Canandaigua	Ontario	1873
	Chas. N. Palmer, Lockport	Niagara	1873
	J. R. Cotes, Batavia	Genesee	1873
	Gurdon Buck, New York	New York	1874
	Alexander Hutchins, Brooklyn	Kings	1874
	A. T. Douglas, Rondout	Ulster	1874
	Bartholomew G. McCabe, Middletown	Orange	1874
	Alexander M. Vedder, Schenectady	Schenectady	1874
	James S. Bailey, Albany	Albany	1874
	Elisha H. Bridges, Ogdensburgh	St. Lawrence	1874
	Edward S. Walker, Ilion	Herkimer	1874
	Judson B. Andrews, Utica	Oneida	1874
	William H. Rice, Phœnix	Oswego	1874
	William H. Beardsley, Coventry	Chenango	1874

Digitized by Google

	Names.	County.	Year.
Drs.	E. C. Moe, Ithaca	Tompkins	1874
	James D. Button, Auburn	Cayuga	1874
	R. W. Pease, Syracuse	Onondaga	1874
	Wm. B. Sprague, Pavilion	Genesee	1874
	B. L. Hovey, Rochester	Monroe	1874

Digitized by Google

ARTICLE XXIV.

List of Physicians on whom the honorary degree of Doctor of Medicine has been conferred by the Regents of the University, on the recommendation of the State Medical Society.

[This Society is restricted by statute from nominating more than four persons to the honorary degree of Doctor of Medicine in any one year. And by various resolutions it has been determined that the respective candidates shall possess moral and professional standing, shall be of the age of forty-five years or upward, and shall receive not less than two-thirds of the votes of the members present. The mode of nomination shall be as follows:

The Society shall, by open nomination, present the names of any number of physicians, and afterward the names of the candidates, or such of them as each member shall please to vote for, not to exceed four, shall be voted for in one ballot; and so many as, on this ballot, shall appear to have received two-thirds of all the votes of the members present, and those only, shall be the persons presented.]

1827....Drs. *John Onderdonk, New York, Obiit 1832.
*Jonathan Eights, Albany, Obiit Aug. 10, 1848. Æt. 75.
*Laurens Hull, Allegany, Obiit June 27, 1865. Æt. 86.
James Stevenson, Cambridge, Washington.
*Thomas Fuller, Otsego.
*Gain Robinson, Wayne.

1828.... *Thomas Brodhead, Columbia, Obiit Nov. 11, 1830. Æt. 65.
*John D. Henry, Monroe.
*Eleazer Gedney, Orange, Obiit 1832.

1829.... *Joseph G. T. Hunt, Kings.
*John H. Steel, Saratoga.
*Henry H. Sherwood, Jefferson.
*Daniel Ayers, Montgomery, Obiit May 25, 1853. Æt. 66.

1830.... *Charles D. Townsend, Albany, Obiit Dec. 19, 1847. Æt. 69.
*Matson Smith, Westchester.
Enos Barnes, Yates.
*Consider King, Cayuga.

1831.... *Thomas Dunlap, Schenectady, Obiit 1860. Æt. 82.
*Samuel Porter, Onondaga.
*John McClellan, Columbia, Obiit Oct. 18, 1855. Æt. 83.
*John Ely, Greene.

1832.... George W. Phillips, Tompkins.
*Alpheus S. Greene, Jefferson, Obiit Feb. 25, 1851. Æt. 64.
*Fayette Cooper, New York.
*Thomas O. H. Crosswell, Greene, Obiit January, 1844. Æt. 76.
Lucius Kellogg, Queens.

1833.... Joshua Lee, Yates.
Asahel Prior, Madison.
Josiah Trowbridge, Erie.
*Benjamin J. Mooers, Clinton, Obiit May 20, 1869. Æt. 82.

1834.... Robert Collins, Rensselaer.
George Eager, Orange.
Asa Fitch, Delaware.
*Harvey W. Doolittle, Herkimer, Obiit 1853. Æt. 64.

1841.... Henry B. Moore, Onondaga.
Claudius C. Coan, Seneca.
John Merriman, Columbia.
*Richard S. Brian, Rensselaer.

* Deceased.

Digitized by Google

1842....Drs. *Levi Farr, Chenango, Obiit July 18, 1859. Æt. 72.
William C. Dewitt, Ulster.
*Lester Jewett, Seneca, Obiit Dec., 1863. Æt. 70.
*Thos. Goodsell, Oneida, Obiit Jan. 12, 1864. Æt. 83.

1844.... *Peter Van O'Linda, Albany, Obiit August, 1872.
William W. Miner, New York.
*Matthias B. Bellows.
Samuel Maxwell, Fulton.

1845.... *Bartow White, Dutchess, Obiit Dec. 11, 1862. Æt. 87.
Samuel Shumway, Essex.
William Mason, Chenango.
*Andrew F. Oliver, Yates.

1846.... Greene Miller, Ulster.
*Truman B. Hicks, Warren.
*Ithamar B. Crawe, Jefferson.
George W. Bradford, Cortland.

1847.... Pelatiah B. Brooks, Broome.
Caleb Bannister.
Hiram Corliss, Washington.
John W. Weed, New York.

1848.... Eliphalet Platt, Dutchess.
Benjamin E. Bowen, Oswego.
*Joshua Webster, Montgomery, Obiit 1849. Æt. 78.
George C. Schaeffer, New York.

1849.... William D. Purple, Chenango.
Lewis Riggs, Cortland.
*Arba Blair, Oneida, Obiit June 20, 1863. Æt. 82.
John W. Riggs, Montgomery.

1850.... John E. Todd, Onondaga.
James Thorn, Rensselaer.
*Patrick H. Hard, Oswego.
*Nathaniel Miller, Suffolk.

1851.... *Purcell Cooke, Obiit Dec. 24, 1850.
*Phineas H. Burdick, Cortland, Obiit March 28, 1870. Æt. 69.
*Heman Norton, Oneida, Obiit 1853. Æt. 75.

1852.... *Mason G. Smith, Wyoming, Obiit April 10, 1857.
Abel Huntington, Suffolk.
Erastus King, Otsego.
*Abel Brace, Greene, Obiit Oct. 24, 1863. Æt. 70.

1854.... *Sardius Brewster, Austinboro, Ohio.
Elias P. Metcalf, Livingston.
Jacob G. Snell, Montgomery.
*John W. Hinckley, Albany, Obiit 1860. Æt. 56.

1855.... Jonathan Kneeland, Onondaga.
*James L. Phelps, New York, Obiit Oct. 17, 1869. Æt. 84.
Alonzo Churchill, Utica, Oneida.
*Edson Carr, Ontario, Obiit Nov. 28, 1861. Æt. 60.

1856.... *Hiram Adams, Onondaga, Obiit March 9, 1865. Æt. 62.
*Silas West, Broome, Obiit Aug. 27, 1859. Æt. 67.
*Samuel J. Swalm, Kings. Obiit Aug. 29, 1872. Æt. 63.
Medina Preston, Sangerfield, Oneida.

1857.... *William S. Norton, Washington, Obiit Feb. 20, 1863. Æt. 66.
Hiram Wotkyns, Rensselaer.
Milton Barnett, Madison.
Daniel H. Bissell, Livingston.

1858.... William L. Appley, Sullivan.

---

*Deceased.

Digitized by Google

1858....Drs. *William Rockwell, New York, Obiit Dec. 30, 1868. Æt. 68.
*James Hogaboom, Rensselaer.
*Nelson A. Garrison, Kings, Obiit Jan. 26, 1872. Æt. 73.
1859.... Peter P. Staats, Albany.
James M. Sturtevant, Oneida.
*Merritt H. Cash, Orange, Obiit April 26, 1861. Æt. 59.
Richard Lanning, Tompkins.
1860.... Francis J. D'Avignon, Clinton.
Harrison Teller, Kings.
*Peter Moulton, Westchester, Obiit Dec. 7th, 1873. Æt. 79.
1861.... *Charles G. Bacon, Oswego.
*Charles Barrows, Oneida.
1864.... *Leonard G. Warren, Albany. Obiit 1866. Æt. 63.
R. Spencer Chapin, New York city.
1865.... Ferris Jacobs, Delhi, Delaware.
Richard L. Satterlee, U. S. Army.
1867.... John Van Ness, Brooklyn, Kings.
1868.... Lewis Post, Lodi, Seneca.
1870.... E. S. Lyman, Sherburne, Chenango.
Tobias J. Greene, Parish, Oswego.
1871.... Evander Odell, Unadilla, Otsego.
1872.... Cornelius H. Schapps, Brooklyn, Kings.
William Lamont, Charlottesville, Schoharie county.
1873.... Nathan R. Tefft, Onondaga Hill.
1874.... Peter Denny, Dutchess county.
William Newman, New York.

* Deceased.

Digitized by Google

ARTICLE XXV.

List of persons eligible for election as Permanent Members.

[During the session of 1873, it was resolved that hereafter no delegate should be declared eligible for election to permanent membership until the close of the third year of his term of service, and until he had been present at three annual meetings of the Society (not necessarily consecutive).]

No. of District.		Nominated.
3.	Drs. Abram D. Spoor, Rensselaer	1854
3.	S. Smith	1856
5.	William H. Gardiner, Oneida	1857
3.	Alexander H. Hoff, Albany	1859
1.	William H. Dudley, Kings county	1860
1.	John A. Brady, Kings county	1860
1.	Samuel R. Percy, New York	1860
3.	A Fitch, Delaware	1860
5.	Nelson J. Barnett, Oswego	1860
3.	William M. Jones, Livingston, Columbia county	1861
1.	J. H. Hobart Burge, Brooklyn	1862
1.	C. L. Mitchell, Brooklyn	1862
1.	John P. Garrish, New York	1862
2.	James Hart Curry, Westchester	1862
5.	W. Taylor, Munnsville, Madison county	1862
1.	Julius Auerbach, Rockaway, Queens	1863
1.	B. I. Raphael, New York city	1863
1.	J. King Merritt, New York city	1864
1.	James Kennedy, New York city	1864
1.	Louis Elsberg, New York city	1864
1.	Jerome C. Smith, New York	1865
2.	Avery Cook, Orange	1865
8.	John Pindar, Schoharie	1865
5.	James Whitford, Madison	1865
6.	W. S. Griswold, Broome	1865
7.	Joseph H. Richardson, Cayuga	1865
1.	Horace P. Farnham, New York city	1866
1.	John H. Hinton, New York city	1866
4.	John H. Mooers, Plattsburgh, Clinton	1866
1.	William Nelson Blakeman, New York city	1867
1.	Thomas S. Bahan, New York city	1867
1.	James J. Connolly, New York city	1867
1.	William T. White, New York city	1867
1.	Christopher Prince, New York city	1867
1.	Wm. M. Chamberlain, New York city	1867
1.	Wm. F. Thoms, New York city	1867
1.	Andrew Otterson, Brooklyn	1867
1.	James Anderson, New York city	1867
4.	A. Pollard, Westport, Essex	1867
5.	Frank D. Beebe, Hamilton, Madison	1867
5.	Thomas B. Smith, Cooperstown, Otsego	1867
6.	A. S. Coe, Oswego	1867
1.	Edward H. Janes, New York	1868
5.	J. K. Leaning, Fly Creek, Otsego	1868
7.	A. W. Marsh, Palmyra	1868

Digitized by Google

No. of District.			Nominated.
7.	Drs.	E. J. Schoonmaker, Magee's Corners	1868
1.		Isaac H. Barber, Brooklyn	1869
1.		Benjamin Howard, New York	1869
1.		J. W. S. Gouley, New York	1869
2.		F. B. Smith, Tappen	1869
3.		John Calhoun, Delhi, Delaware county	1869
3.		Jas. S. McLaury, Walton, Delaware county	1869
4.		Asahel Perry, South Easton, Washington county	1869
5.		T. J. Green, Parish, Oswego county	1869
6.		D. S. Chamberlin, Lyons, Wayne county	1869
7.		E. S. Smith, Yates	1869
7.		Lyman Congdon, Tompkins	1869
8.		Wm. W. Ely, Rochester	1869
8.		George Swinburne, Rochester	1869
1.		Horace P. Farnham, New York	1870
1.		William C. Otterson, Kings county	1870
1.		John S. Young, Kings county	1870
2.		Levi Lounsbury, Stone Ridge	1870
2.		John Wales, Rondout	1870
3.		Joseph Lewi, Albany	1870
3.		P. V. S. Pruyn, Kinderhook	1870
4.		D. W. Jones, Franklin county	1870
5.		William L. Baldwin, Utica	1870
5.		C. C. P. Clark, Oswego	1870
5.		C. T. Budd, Turin, Lewis county	1870
5.		George W. Cooke, Otego	1870
5.		Horace Lathrop, Cooperstown	1870
6.		Samuel Ensign, Bath	1870
6.		Carlton R. Heaton, Newark Valley	1870
7.		William Vosburgh, Lyons	1870
8.		George Abbott, White's Corners	1870
1.		G. S. Winston, New York	1871
1.		D. B. St. John Roosa, New York	1871
1.		A. E. M. Purdy, New York	1871
2.		Thomas Hammond, Dover Plains, Dutchess	1871
3.		Matthew H. Burton, Troy, Rensselaer county	1871
3.		Francis B. Parmele, Greenbush, Rensselaer county	1871
3.		Charles L. Hubbell, Troy, Rensselaer county	1871
3.		E. W. Carmichael, Sand Lake, Rensselaer	1871
3.		E. Whittlesy, Durham, Greene	1871
4.		Moses H. Colby, Quaker Springs, Saratoga	1871
4.		Newton H. Ballou, Mechanicville, Saratoga	1871
4.		Alfred J. Long, Whitehall, Washington	1871
5.		H. G. P. Spencer, Watertown, Jefferson	1871
6.		William Bassett, Binghamton, Broome	1871
6.		F. M. Perrine, Dansville, Livingston county	1871
1.		Gouverneur M. Smith New York	1872
1.		Fred. A Burrall, New York	1872
1.		Stephen Rogers, New York	1872
1.		John C. Peters, New York	1872
1.		C. H. King, Richmond, S. I.	1872
1.		James R. Leaming, New York	1872
2.		J. Hasbrouck, Port Ewen, Ulster	1872
2.		J. H. Pooley, Jr., Yonkers	1872
3.		Daniel D. Bucklin, Lansingburgh	1872
3.		J. C. Benham, Hudson	1872
4.		Lewis Sanborn, Heuvelton	1872
4.		Joseph D. Stuart, Cambridge	1872

Digitized by Google

No. of District.		Nominated.
5.	Drs. Joseph E. West, Utica	1872
5.	Walter Kempster, Utica	1872
6.	G. W. Avery, Norwich	1872
7.	A. S. Cummings, Cayuga	1872
8.	Jabez Allen, Aurora	1872
1.	Ernst Krackowizer, New York	1873
1.	Abraham Jacobi, New York	1873
1.	H. Knapp, New York	1873
1.	Salvatore Caro, New York	1873
1.	B. S. Thompson, New York	1873
2.	Augustus Huhne, Rondout	1873
2.	Solomon Van Etten, Port Jervis, Orange	1873
3.	Albert Van Derveer, Albany	1873
3.	Henry March, Albany	1873
3.	Charles A. Robertson, Albany	1873
3.	*A. M. Vedder, Schenectady	1873
4.	Norman L. Snow, Canajoharie, Montgomery	1873
4.	Eugene Beach, Gloversville, Fulton	1873
4.	A. C. Butler, Plattsburgh, Clinton	1873
4.	E. D. Ferguson, Essex, Essex	1873
5.	Frank D. Beebe, Hamilton, Madison	1873
5.	Lucius Stevens, Constantia, Oswego	1873
5.	F. B. A. Lewis, Watertown, Jefferson	1873
5.	Franklin B. Hough, Lowville, Lewis	1873
5.	William H. Nelson, Taberg, Oneida	1873
5.	*Judson B. Andrews, Utica, Oneida	1873
6.	George Douglas, Oxford, Chenango	1873
6.	William B. Alley, Nunda, Livingston	1873
6.	A. H. Cruttenden, Bath, Steuben	1873
6.	John K. Stanchfield, Elmira, Chemung	1873
6.	George W. Metcalf, Owego, Tioga	1873
7.	J. W. Palmer, Victor, Ontario	1873
7.	William Oliver, Penn Yan, Yates	1873
7.	T. S. Brinkerhoff, Auburn, Cayuga	1873
8.	*William B. Sprague, Pavilion, Genesee	1873
8.	*B. L. Hovey, Rochester, Monroe	1873
8.	W. S. Ely, Rochester, Monroe	1873
8.	William Gould, Buffalo, Erie	1873
3.	Lemuel Cross, Cobbleskill, Schoharie	1874
3.	Israel C. Bourne, Masonville, Delaware	1874
3.	George P. Salmon, Hudson, Columbia	1874
4.	Asa W. Tupper, N. Granville, Washington,	1874
4.	Henry Gray, Greenwich, Washington	1874
5.	Joseph Gardiner, Williamstown, Oswego	1874
5.	Hiram G. Dubois, Camden, Oneida	1874
5.	F. W. Root, E. Hamilton, Madison	1874
6.	C. B. Richards, Binghamton, Broome	1874
7.	Judson C. Nelson, Truxton, Cortland	1874
8.	Thomas D. Strong, Westfield Chautauqua	1874

* Elected Permanent Member in 1874.

Digitized by Google

ARTICLE XXVI.

List of persons eligible for election as Honorary Members.

Nominated.		
1855....	Drs.	John H. Ridell.
		Christopher Widner.
1857....		Bennett Dowler, New Orleans, Louisiana.
1863....		Ralph Deming, Litchfield, Conn.
1865....		H. J. Stevens, St. Albans, Vt.
1866....		William S. Hopkins, Vergennes, Vt.
1868....		William Livingston, St. Johns, N. B.
1871....		Greenville Dowell, Galveston, Texas.
		John J. H. Love, Montclair, N. J.
1872....		Lewis Oakley, Elizabeth, N. J.
		Charles N. Hewitt, Red Wing, Minn.
		J. M. Toner, Washington, D. C.
1873....		*Benjamin W. Richardson, London.
	Mr.	*T. Spencer Wells, London.
	Drs.	S. C. Busey, Washington, D. C.
		E. H. Gregory, St. Louis, Mo.
		*Washington L. Atlee, Philadelphia.
		*Wm. Boeck, Christiana, Norway.
		*J. Matthews Duncan, Edinburgh, Scotland.
1874....		Fancisco Dichira, Palermo, Italy.
		Louis Vecker, Paris, France.
		J. M. Da Costa, Philadelphia, Pa.

* Elected Honorary Member in 1874.

Digitized by Google

ARTICLE XXVII.

Classification of counties as to the election of delegates.

[The first classification of counties was made pursuant to the statute of 1806, at the session of the Society in 1807. The additional counties subsequently erected were classified by virtue of powers given by the same statute, at the sessions of the Society held in 1813 and 1826. In case of the erection of any new county, the Secretary is directed to add the same, so as to keep the present number as nearly equal as possible.]

VACANT.
February 1, 1875.

New York,
Orange,
Delaware,
Onondaga,
Montgomery,
Rensselaer,
Genesee,
Seneca,
Allegany,

VACANT.
February 1, 1875.

Broome,
Franklin,
Livingston,
Monroe,
Oswego,
Yates,
Wyoming,
Schuyler.—17.

VACANT.
February 1, 1876.

Greene,
Dutchess,
Jefferson,
Ontario,
Essex,
Lewis,
Schoharie,
Niagara,
Warren,

VACANT.
February 1, 1876.

Chautauqua,
Orleans,
Putnam,
Queens,
Fulton,
College Physicians & Surgeons, N. Y.,
Medical Faculty of Geneva College,
Long Island College Hospital.—17.

VACANT.
February 1, 1877.

Albany,
Oneida,
Cayuga,
Otsego,
Saratoga,
Schenectady,
Tioga,
Cattaraugus,
Richmond,
Steuben,
Sullivan,
Tompkins,
Chemung,
Rockland,
Albany Medical College,
Medical Department of University of Buffalo.—16.

VACANT,
February 1, 1878.

Westchester,
Columbia,
Ulster,
Madison,
Herkimer,
Chenango,
Washington,
Clinton,
Suffolk,
St. Lawrence,
Cortland,
Erie,
Hamilton,
Kings,
Wayne,
Medical Faculty of New York City University,
N. Y. Academy of Medicine,
Bellevue Hospital Medical Col.—18.

Digitized by Google

ARTICLE XXVIII.

Presidents of the Medical Society of the State of New York since its organization.

Drs.	*William McClelland, Albany, Obiit 1812	1807
	*Nicholas Romayne, New York, Obiit July 20, 1817. Æt. 61	1808
	*Nicholas Romayne, New York	1809
	*Nicholas Romayne, New York	1810
	*William Wilson, Columbia, Obiit 1829	1811
	*John R. B. Rodgers, New York, Obiit 1833. Æt. 76	1812
	*John R. B. Rodgers, New York	1813
	*John R. B. Rodgers, New York	1814
	*Joseph White, Otsego, Obiit June 2, 1832. Æt. 70	1815
	*Joseph White, Otsego	1816
	*John Stearns, Albany, Obiit 1849. Æt. 75	1817
	*John Stearns, Albany	1818
	*John Stearns, Albany	1819
	*John Stearns, Albany	1820
	*Samuel L. Mitchill, New York, Obiit Sept. 7, 1831. Æt. 67	1821
	*Samuel L. Mitchill, New York	1822
	*Alexander Coventry, Utica, Obiit Dec. 9, 1831. Æt. 65	1823
	*Alexander Coventry, Utica	1824
	*James R. Manley, New York, Obiit Nov. 21, 1851. Æt. 69	1825
	*James R. Manley	1826
	*Theodoric Romeyn Beck, Albany, Obiit Nov. 19, 1855. Æt. 64	1827
	*Theodoric Romeyn Beck	1828
	*Theodoric Romeyn Beck	1829
	*Jonathan Eights, Albany, Obiit Aug. 10, 1848. Æt. 75	1830
	*Jonathan Eights	1831
	*Thomas Spencer, Madison, Obiit May 30, 1857. Æt. 65	1832
	*Thomas Spencer	1833
	*John H. Steel, Saratoga	1834
	*John H. Steel	1835
	*James McNaughton, Albany, Obiit June 11, 1874. Æt. 78	1836
	*James McNaughton, Albany	1837
	*Laurens Hull, Oneida, Obiit June 27, 1865. Æt. 86	1838
	*Laurens Hull	1839
	*Sumner Ely, Otsego, Obiit Feb. 3, 1857. Æt. 70	1840
	*John B. Beck, New York, Obiit April 9, 1851. Æt. 56	1841
	*William Taylor, Onondaga, Obiit Sept., 1865. Æt. 74	1842
	*Samuel White, Columbia, Obiit 1845. Æt. 68	1843
	*Joel A. Wing, Albany, Obiit Sept. 6, 1852. Æt. 64	1844
	*James Webster, Rochester, Obiit July 18, 1854. Æt. 50	1845
	*John McCall, Utica, Obiit Oct. 6, 1867. Æt. 80	1846
	*Thomas W. Blatchford, Troy, Obiit Jan 7, 1866. Æt. 71	1847
	*Alexander H. Stevens, New York, Obiit March 30, 1869. Æt. 79	1848
	*Alexander H. Stevens	1849
	*Alexander Thompson, Aurora, Obiit Sept. 18, 1869. Æt. 60	1850
	*Robert G. Frary, Hudson, Obiit Dec. 29, 1862. Æt. 69	1851
	Alonzo Clark, New York	1852
	J. S. Sprague, Cooperstown	1853
	C. B. Coventry, Utica	1854

*Deceased.

Digitized by Google

Drs.	Frank H. Hamilton, New York	1855
	*Alden March, Albany, Obiit June 17, 1869. Æt. 73	1856
	*Augustus Willard, Greene, Obiit March 12, 1868. Æt. 69	1857
	*Thomas C. Brinsmade, Troy, Obiit June 22, 1868. Æt. 66	1858
	B. Fordyce Barker, New York	1859
	*Daniel T. Jones, Onondaga, Obiit March 29, 1861. Æt. 60	1860
	Edward H. Parker, Poughkeepsie	1861
	Thomas Hun, Albany	1862
	Daniel P. Bissell, Utica	1863
	Frederick Hyde, Cortland	1864
	Henry W. Dean, Rochester	1865
	Joseph C. Hutchison, Brooklyn	1866
	John P. Gray, Utica	1867
	J. V. P. Quackenbush, Albany	1868
	James P. White, Buffalo	1869
	Samuel O. Vanderpoel, Albany	1870
	William C. Wey, Elmira	1871
	C. R. Agnew, New York	1872
	E. M. Moore, Rochester	1873
	George J. Fisher, Sing Sing	1874

* Deceased.

Digitized by Google

INDEX.

Volumes 1873 and 1874 are designated respectively by the numerals i and ii.

PAGE.

Acute dilatation of stomach, a case of, by Dr. W. C. Wey.....ii, 235
Adams, Dr. J. G., obituary notice of Dr. A. H. Stevens.....ii, 288
Agnew, Dr. C. R., address as President on some of the relations of medical profession to education, i, 70; inaugural address.....i, 3
Allen, Dr. R. L., obituary notice of Dr. J. H. Reynolds, i, 182; obituary notice of.....ii, 285
Anchylosis of right temporo-maxillary articulation, a case of, treated by excision of condyle, by Dr. J. L. Little.....ii, 119
Annual address of President Agnew, i, 70; of President Moore.....ii, 41
Appendix vermiformis, three cases of abscess and pelvic peritonitis from perforation of, by Dr. R. B. Bontecou.....i, 137
Army medical corps, resolutions concerning rank of.....ii, 30
Aural disease, relation of syphilis to, by Dr. Roosa, ii, 230; sketch of progress of otology, by Dr. Roosa.....i, 103
Bailey, Dr. J. S., cases of meningocele and lipomata.....ii, 281
Beard, Dr. G. M., new method of treating malignant tumors by electrolyzing the base.....ii, 238
Board of Examiners, report of committee on, i, 53; discussion concerning appointment of, i, 54; report of committee on, ii, 35; nomination of..ii, 35
Bontecou, Dr. R. B., report of three cases of abscess and pelvic peritonitis from perforation of appendix vermiformis, relieved by operation.....i, 137
Bridges, Dr. E. H., case of disease of left ovary resulting in fatal hæmorrhage, i, 133
Buck, Dr. G., remarks on intra-capsular fracture, i, 19; case of plastic operation.....i, 36
Burr, Dr. G., case of occlusion of femoral artery from fracture of femur....i, 140
Censors' report concerning Dr. E. V. Stryker.....i, 50
Chamberlin, Dr. W. M., paper on hydrostatics applied to therapeutics....ii, 16
Changing time of meeting, report of committee on, i, 15; i, 27; resolutions regarding.....i, 48
Cholera, transmissibility of, in relation to quarantine, by Dr. Vanderpoel..ii, 260
Clark, Dr. Darius, obituary notice of.....i, 183
Classification of counties as to election of delegates.....ii, 322
Colles' fracture, report of five cases treated on plan of Dr. E. M. Moore, by Dr. B. L. Hovey, i, 135; paper on, by Dr. T. K. Cruse.....ii, 56

Digitized by Google

PAGE.
Committees, *appointed*—on arrangements and receptions, i, 8; ii, 11; business, i, 8; ii, 11; credentials, i, 8; ii, 11; ethics, i, 8; ii, 11; hygiene, i, 63; ii, 26; nominations, i, 15; ii, 19; President's address, i, 12; ii, 21
Reports of—on by-laws, i, 28; ethics, i, 39; foundling asylums, i, 41; hygiene, ii, 19; nominations, i, 63; ii, 35; President's address, i, 51; ii, 28; prize essays, ii, 31; publication, ii, 23; on pharmacopœia, i, 26. (See, also, Nominating committees.)
Corliss, Dr. H., obituary notice of Dr. B. P. Staats ..... i, 180
Coles, Dr. L. B., report of a case of urethrocele ..... ii, 185
Cruse, T. K., Merritt H. Cash prize essay on Colles' fracture ..... ii, 56
Disease of left ovary resulting in fatal hæmorrhage, by Dr. E. H. Bridges .. i, 133
Dislocation of tarsus from astragalus, case of, by Dr. E. H. Parker ..... i, 17
Education, some of the relations of medical profession to, address on, by Dr. C. R. Agnew, i, 70; also i, 5; report of committee on ..... i, 52
Electrolysis in treatment of stricture, by Dr. R. Newman, ii, 128; in treatment of malignant tumors, by Dr. G. M. Beard, ii, 238; discussion ... ii, 24
Election of officers ..... i, 68; ii, 39
Eligible for election as honorary members, ii, 321; as permanent members, ii, 318; resolution concerning latter ..... i, 68
Eligibility for permanent membership, action concerning ..... i, 68
Epileptics and paralytics, remarks on care of, by President Agnew, i, 6; by committee on President's address ..... i, 52
Ergot, discussion concerning use of, ii, 22; hypodermic use of ..... i, 56; ii, 23
Eye diseases, paper on diagnosis of, by Dr. C. A. Robertson, ii, 155; on hemiopic and sector-like defects of field of vision, by Dr. H. Knapp, i, 149; on tumors of the eye-ball, by Dr. H. Knapp, ii, 225; discussion of latter, ii, 21; case of nervous perturbation following operation ..... i, 164
Foundling asylums, report of committee on ..... i, 41
Gouley, Dr. J. W. S., on perineal lithotrity ..... i, 166
Gray, Dr. John P., paper on pathology of insanity, ii, 202; presented micro-photographs of brain tissue ..... i, 49
Hæmoptisis, by Dr. J. R. Leaming ..... ii, 190
Hemiopic and sector-like defects of field of vision and their relation to diseases of heart and brain, by Dr. H. Knapp ..... i, 149
Honorary degree of doctor of medicine, list of physicians on whom it has been conferred ..... ii, 315
Honorary members, list of, ii, 301; eligible for election, list of ..... ii, 321
Hovey, Dr. B. L., report of cases of Colles' fracture, treated after plan of Dr. E. M. Moore ..... i, 135
Hun, Dr. Thomas, obituary notice of Dr. Platt Williams ..... i, 175
Hunt, Dr. E. M., of New Jersey, remarks ..... i, 24
Hydrostatics applied to therapeutics, by Dr. W. M. Chamberlain ..... ii, 16
Hygiene, reports on, ii, 19; remarks on, by President Agnew, i, 3; report of committee on president's address on, i, 51; resolutions concerning committee on, i, 63; and, ii, 29; committee on, appointed ..... i, 63; ii, 26
Hypodermic syringes, method of cleansing ..... ii, 23
Hypodermic use of ergotine, discussion on ..... i, 56; ii, 22
Idiopathic peritonitis, by Dr. J. Lewi ..... i, 143
Inaugural address, of President Agnew, i, 3; of President Moore ..... ii, 3
Insanity, pathology of, by Dr. J. P. Gray ..... ii, 202

Digitized by Google

PAGE.
Intra-capsular fracture, discussion of paper on by Dr. E. M. Moore .....i, 19
Inversion of uterus, and report of two cases, by Dr. J. P. White, ii, 174; discussion of .....ii, 17
Knapp, Dr. H., contributions to pathology of tumors of eye-ball, ii, 225; paper on hemiopic and sector-like defects of field of vision.....i, 149
Krackowizer, Dr. E., report of three cases of perineal lithotripsy.....ii, 168
Leaming, Dr. J. R., paper on hæmoptisis.....ii, 190
Legislation in medical affairs, President Moore on, ii, 3; report of committee on, ii, 28; resolutions and discussion concerning.....i, 46
Lewi, Dr. J., paper on idiopathic peritonitis.....i, 143
Lipomata, case of, by Dr. J. S. Bailey.....ii, 282
Little, Dr. J. L., paper on anchylosis of temporo-maxillary articulation, treated by excision of condyle.....ii, 119
Malignant tumors, a new method of treating by electrolyzing the base, by Dr. G. M. Beard, ii, 238; discussion on .....ii, 24
Medical law, regulating practice of medicine, resolutions and remarks concerning, i, 46. (See Legislation.)
Meningocele, a case of, by Dr. J. S. Bailey.....ii, 281
Merritt H. Cash prize essay on Colles' fracture, by Dr. T. K. Cruse, ii, 56; report of committee on.....ii, 31
Moore, Dr. E. M., annual address as President .....ii, 41
Nerve injuries, ultimate results of, discussion of paper on by Dr. Wm. B. Alley .....i, 10
Nervous perturbation, remarkable case of, by Dr. C. A. Robertson.....i, 164
Newman, Dr. R., paper on electrolysis in treatment of stricture of urethra, ii, 128
Niagara county, report of Committee on Medical Ethics concerning.....i, 39
Nominating Committee, report of, i, 63; ii, 35; resolutions concerning appointment of .....i, 45; ii, 27
Obituary notices of:
Dr. Platt Williams, by Dr. Thomas Hun .....i, 175
Dr. Peter Van Olinda, by Dr. A. Van Derveer.....i, 178
Dr. B. P. Staats, by Dr. H. Corliss.....i, 180
Dr. J. H. Reynolds, by Dr. R. L. Allen.....i, 182
Dr. Darius Clark, by Dr. B. F. Sherman.....i, 183
Dr. R. L. Allen, by Dr. T. B. Reynolds.....ii, 285
Dr. A. H. Stevens, by Dr. J. G. Adams.....ii, 288
Occlusion of femoral artery from fracture of femur, by Dr. George Burr ....i, 140
Oleic acid, remarks concerning, by Dr. E. R. Squibb .....ii, 23
Otology, sketch of progress of, by Dr. Roosa, i, 103; discussion of paper..i, 8
Ovary, disease of, resulting in fatal hæmorrhage, case reported by Dr. E. H. Bridges .....i, 133
Pathology of insanity, by Dr. J. P. Gray, ii, 202; of tumors of eyeball, by Dr. H. Knapp, ii, 225; discussion on latter paper .....ii, 21
Penetrating gun-shot wound of cranium with recovery, by Dr. A. Van Derveer.....ii, 233
Perineal lithotripsy, paper on, by Dr. E. Krackowizer .....ii, 168
Perineal lithotrity, paper on, by Dr. J. W. S. Gouley, i, 166; discussion of.....i, 12
Peritonitis, idiopathic, by Dr. J. Lewi.....i, 143
Permanent membership, resolutions concerning.....i, 35

Digitized by Google

PAGE.
Permanent members, list of, ii, 305; eligible for election, list of, ii, 318; resolution regarding non-payment of initiation fee.....i, 35
Plastic operation, case of, reported by Dr. G. Buck.....i, 36
Presidents of the society, list of, since organization of the society,.....ii, 3 3
Prize essays, report of committee on.....ii, 31
Proceedings of the society for 1873: First day, morning session, 3; afternoon session, 12; evening session, 26. Second day, morning session, 28; afternoon session, 41. Third day..... 51
For 1874: First day, morning session, 3; afternoon session, 16; evening session, 19. Second day, morning session, 21; afternoon session, 26; evening session, 27. Third day..... 28
Publication of Transactions, report of committee on, ii, 23; President Moore on, ii, 10; report on, of Committee on President's address.....ii, 28
Questions of privilege, raised by Dr. Roosa.....i. 31
Quarantine, general principles affecting organization of, by Dr. S. O. Vanderpoel, ii, 243; transmissibility of yellow fever and cholera in relation to, ii, 260; discussion on latter.....ii, 11
Reynolds, Dr. T. B., obituary notice of Dr. R. L. Allen.....ii, 285
Reynolds, Dr. J. H., obituary notice of.....i, 182
Robertson, Dr. C. A., case of remarkable nervous perturbation, i, 164; paper on diagnosis in eye diseases.....ii, 155
Roosa, Dr. D. B. St. J., on progress of otology, i, 103; on relations of syphilis to aural disease.....ii, 230
Schools of medicine, see Education.
Sherman, Dr. B. F., obituary notice of Dr. D. Clark.....i, 183
Spontaneous amputation, case presented by Dr. J. N. Northrop.....i, 61
Squibb, Dr. E. R., report on the U. S. Pharmacopœia.....i, 82
Staats, Dr. B. P., obituary notice of.....i, 180
Stevens, Dr. A. H., obituary notice of.....ii, 288
Stricture, treatment of by electrolysis, by Dr. R. Newman, ii, 128; discussion of paper on, by Dr. F. N. Otis.....i, 28
Syphilis, relation of, to aural disease, by Dr. Roosa.....ii, 230
Treasurer's report.....i, 31; ii, 31
Tumors of eye-ball, contributions to the pathology of, by Dr. H. Knapp, ii, 225; discussion of paper.....ii, 21
U. S. Pharmacopœia, report on, by Dr. E. R. Squibb, i, 82; remarks on..i, 26
Urethrocele, a case of, by Dr. L. B. Cotes.....ii, 185
Uterine fibroid treated by ergotine hypodermically.....i, 56
Vanderpoel, Dr. S. O., general principles affecting organization of quarantine, ii, 243; on transmissibility of yellow fever and cholera in relation to quarantine.....ii, 260
Van Derveer, Dr. A., case of penetrating gun-shot wound of cranium with recovery, ii, 233; obituary notice of Dr. Van Olinda.....i, 178
Van Olinda, Dr. Peter, obituary notice of.....i, 178
Wey, Dr. W. C., case of acute dilatation of stomach.....ii, 235
White, Dr. J. P., report of two cases of inversion of uterus.....ii, 174
Williams, Dr. Platt, obituary notice of.....i, 175
Yellow fever and cholera, transmissibility of, in relation to quarantine, by Dr. S. O. Vanderpoel, ii, 260; discussion on.....ii, 11

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google